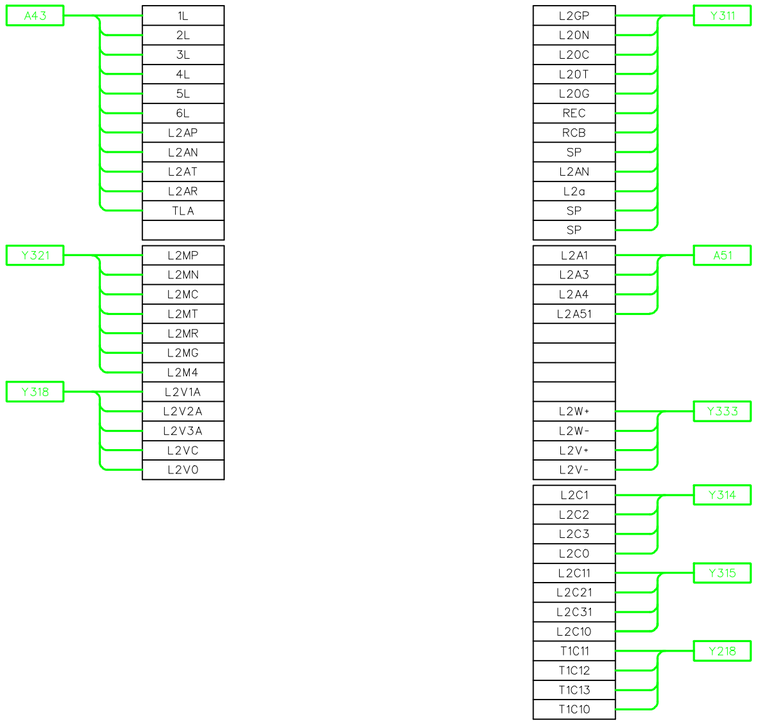
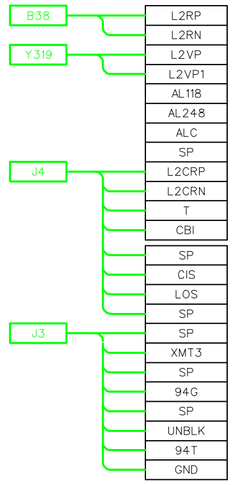
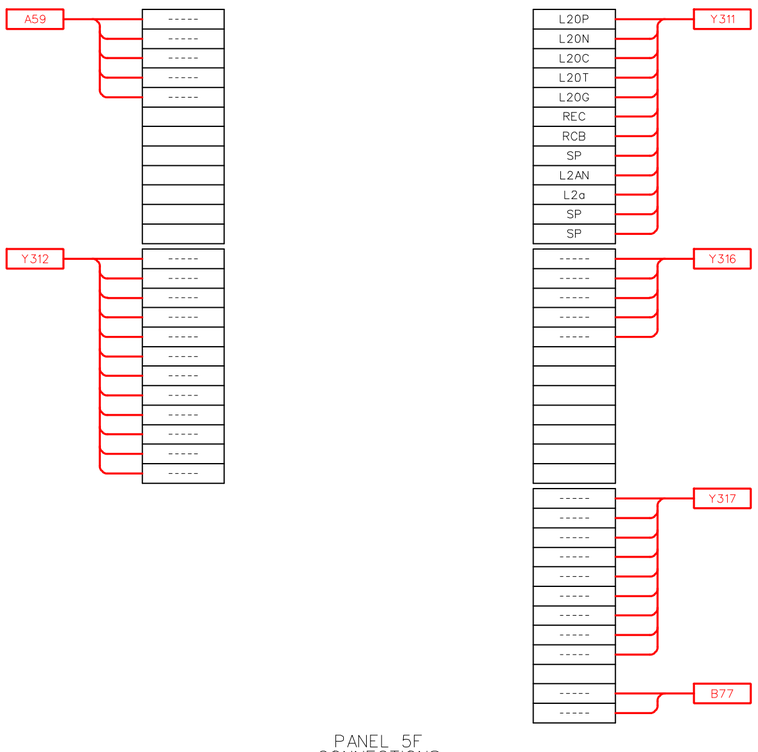


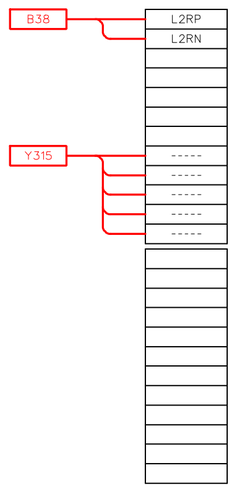
PANEL 5F
CONNECTIONS
EXISTING



PANEL 5R
CONNECTIONS
EXISTING



PANEL 5F
CONNECTIONS
NEW



PANEL 5R
CONNECTIONS
NEW

REFERENCE DRAWINGS

KIRKHOF ELECTRIC E1592 SH. 18

NOTES:

1. VARIOUS EDITIONS OF THE REFERENCE DRAWINGS SHOW CONFLICTING WIRE DESIGNATIONS. THIS DRAWING IS BASED ON THE LATEST KNOWN EDITION OF THE REFERENCE DRAWINGS. FIELD VERIFY ALL CONNECTIONS AND WIRE DESIGNATIONS PRIOR TO STARTING WORK. PROVIDE AS-BUILT CORRECTIONS TO THIS DRAWING UPON COMPLETION OF WORK. SEE CONDUIT AND CABLE SCHEDULES SHEETS 3, 4, 5, 16, AND 17.

2. THIS DRAWING DEPICTS EXTERNAL CABLE CONNECTIONS TO THE PANELS. INTERNAL CABLE CONNECTIONS (CABLES WITHIN PANELS AND BETWEEN PANELS) ARE NOT SHOWN, AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SYMBOL	ZONE	DESCRIPTION	DATE	BY

REVISIONS

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE

PANELS 5F & 5R
CONNECTION DIAGRAMS

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E69

SCALE: SHEET 85

HAP103TB.DGN HAP103E69.DGN

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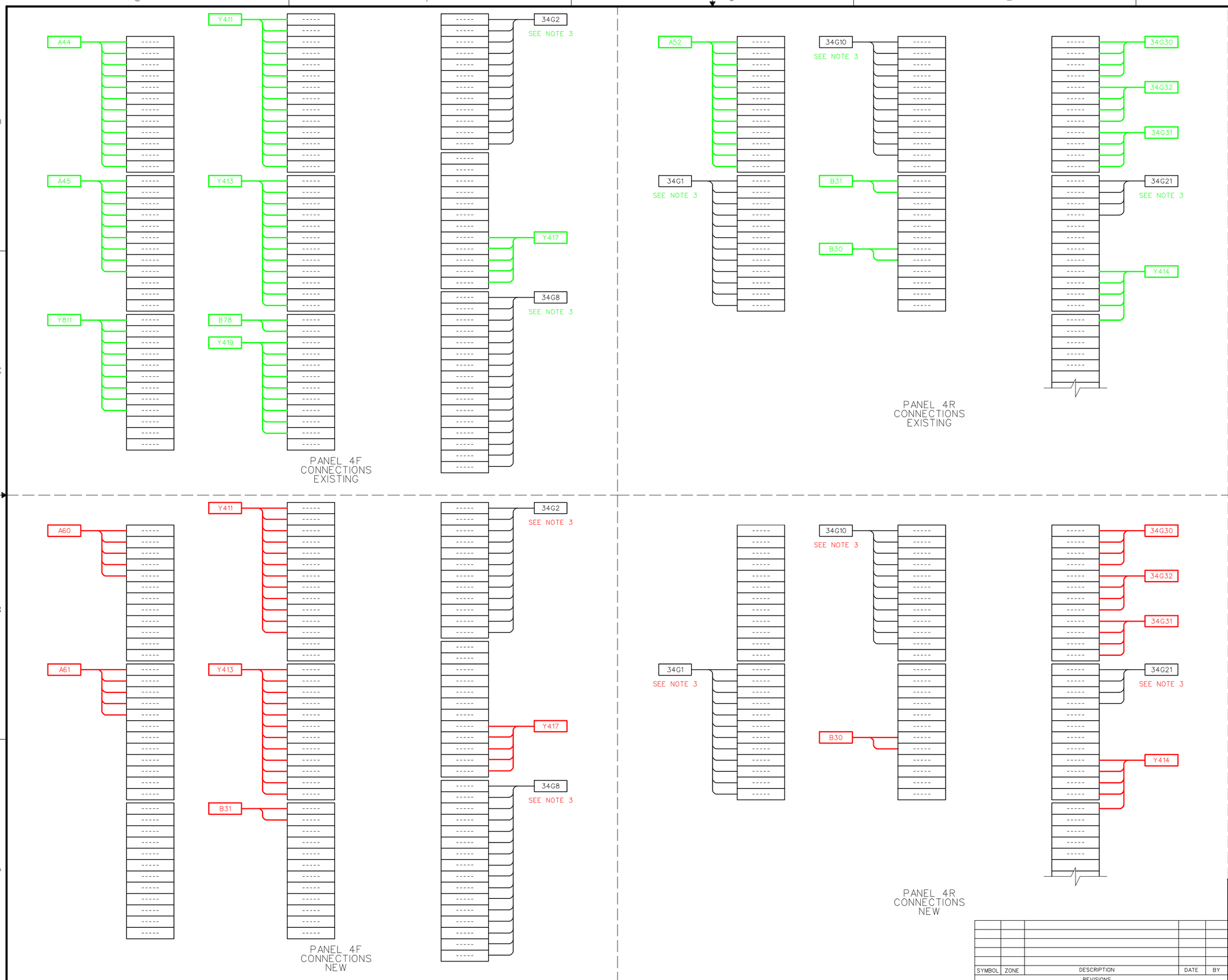

REFERENCE DRAWINGS

NOT AVAILABLE

NOTES:

1. REFERENCE DRAWINGS FOR THESE PANELS ARE NOT AVAILABLE. THIS DRAWING IS BASED ON SIMILAR PANELS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK, INCLUDING ALL TERMINAL BLOCKS, CABLES, CABLE DESIGNATIONS, CONNECTIONS, AND WIRE DESIGNATIONS. PROVIDE AS-BUILT CORRECTIONS TO THIS DRAWING UPON COMPLETION OF WORK. SEE CONDUIT AND CABLE SCHEDULES SHEETS 6, 7, 16, 17, 18, AND 19.
2. THIS DRAWING DEPICTS EXTERNAL CABLE CONNECTIONS TO THE PANELS. INTERNAL CABLE CONNECTIONS (CABLES WITHIN PANELS AND BETWEEN PANELS) ARE NOT SHOWN, AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. DISCONNECT AND RECONNECT EXISTING WIRING, RELABEL IF NECESSARY, FIELD VERIFY.

SYMBOL	ZONE	DESCRIPTION	DATE	BY

REVISIONS

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
PANELS 4F & 4R
CONNECTION DIAGRAMS
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-70

SCALE: SHEET 86

11 Mar 2003
11:43:18

HAP103TB.DGN HAP103E70.DGN

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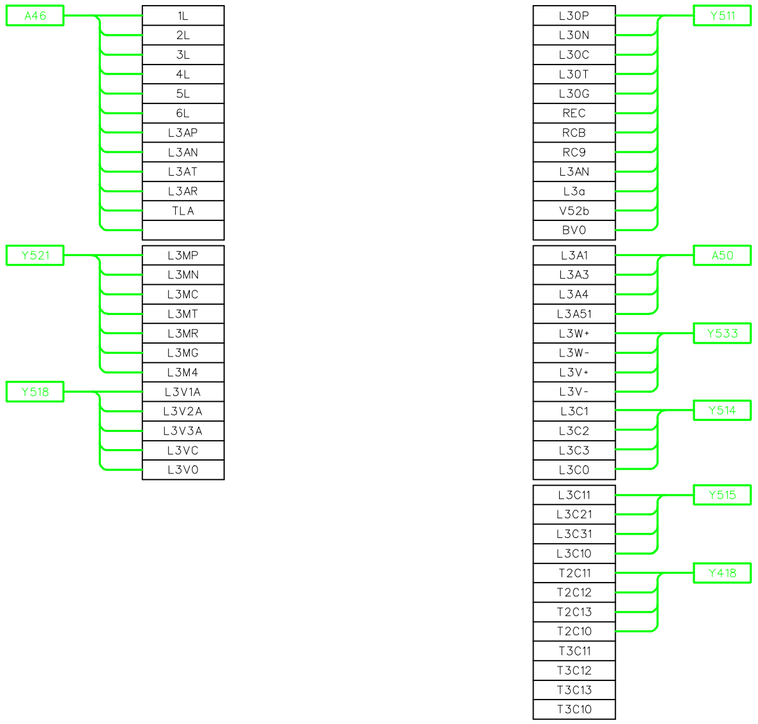
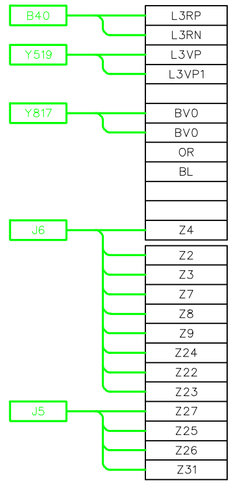
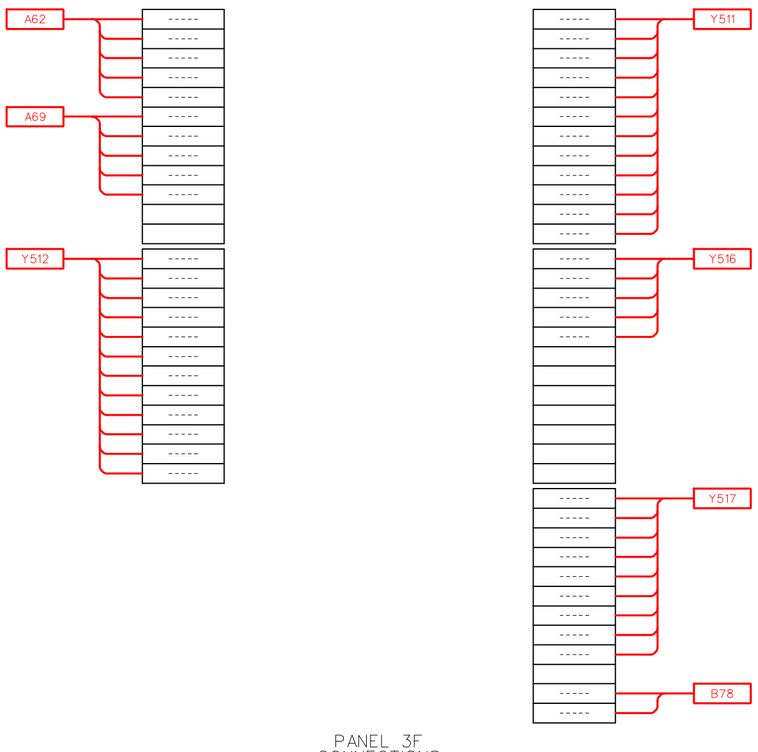


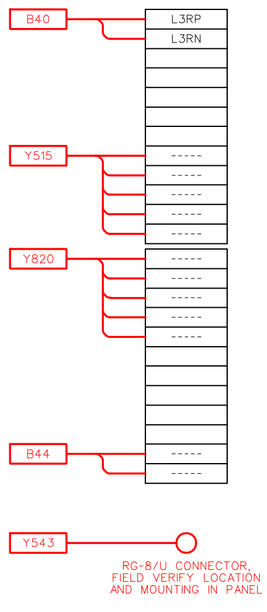
PANEL 3F
CONNECTIONS
EXISTING



PANEL 3R
CONNECTIONS
EXISTING



PANEL 3F
CONNECTIONS
NEW



PANEL 3R
CONNECTIONS
NEW

REFERENCE DRAWINGS

KIRKHOF ELECTRIC E1592 SH. 16

NOTES:

1. VARIOUS EDITIONS OF THE REFERENCE DRAWINGS SHOW CONFLICTING WIRE DESIGNATIONS. THIS DRAWING IS BASED ON THE LATEST KNOWN EDITION OF THE REFERENCE DRAWINGS. FIELD VERIFY ALL CONNECTIONS AND WIRE DESIGNATIONS PRIOR TO STARTING WORK. PROVIDE AS-BUILT CORRECTIONS TO THIS DRAWING UPON COMPLETION OF WORK. SEE CONDUIT AND CABLE SCHEDULES SHEETS 8, 9, 10, 16, 17, AND 19.

2. THIS DRAWING DEPICTS EXTERNAL CABLE CONNECTIONS TO THE PANELS. INTERNAL CABLE CONNECTIONS (CABLES WITHIN PANELS AND BETWEEN PANELS) ARE NOT SHOWN, AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SYMBOL	ZONE	DESCRIPTION	DATE	BY

REVISIONS

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE

PANELS 3F & 3R
CONNECTION DIAGRAMS

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-71

SCALE: SHEET 87

11-Mar-2003
11:44:15

HAP103TB.DGN HAP103E71.DGN

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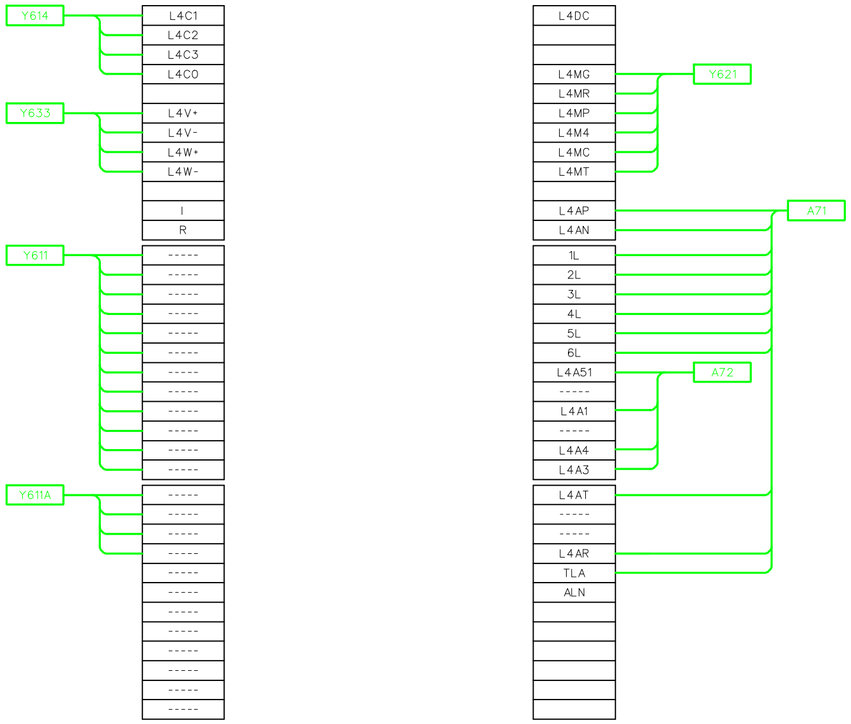
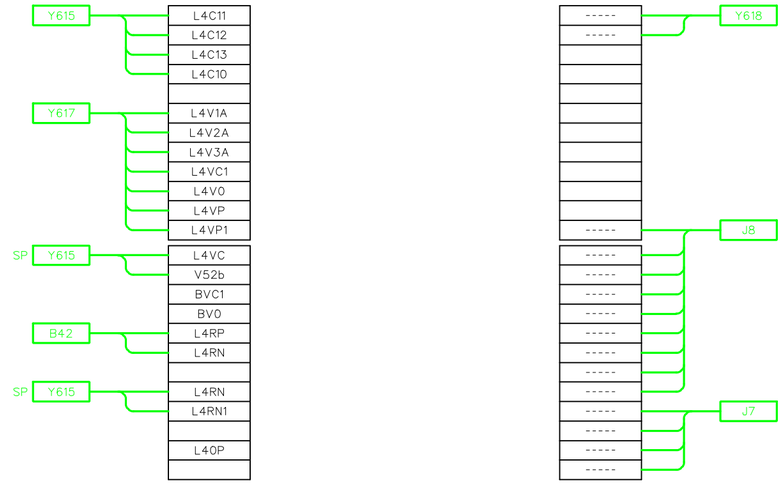
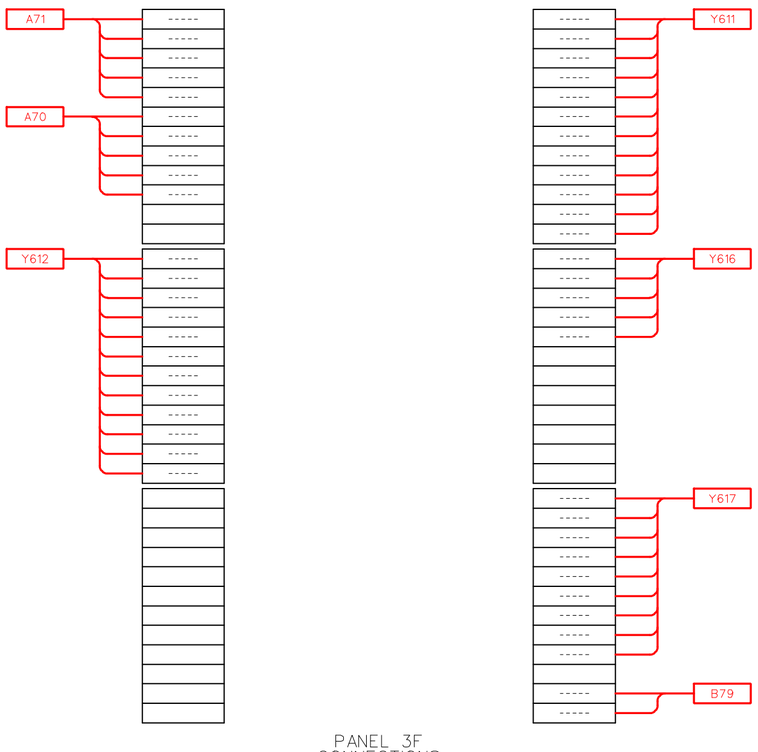


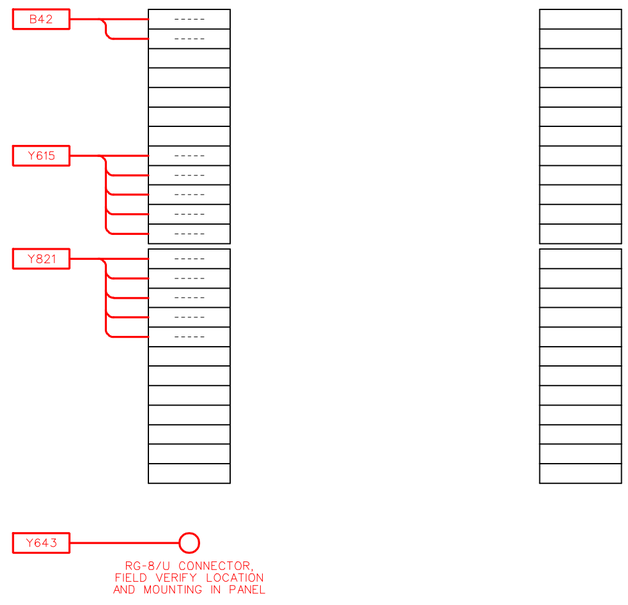
PANEL 3F
CONNECTIONS
EXISTING



PANEL 3R
CONNECTIONS
EXISTING



PANEL 3F
CONNECTIONS
NEW



PANEL 3R
CONNECTIONS
NEW

REFERENCE DRAWINGS

UNITED ELECTRIC CONTROL 7569C-4 & 7569C-5

NOTES:

1. VARIOUS EDITIONS OF THE REFERENCE DRAWINGS SHOW CONFLICTING WIRE DESIGNATIONS. THIS DRAWING IS BASED ON THE LATEST KNOWN EDITION OF THE REFERENCE DRAWINGS. FIELD VERIFY ALL CONNECTIONS AND WIRE DESIGNATIONS PRIOR TO STARTING WORK. PROVIDE AS-BUILT CORRECTIONS TO THIS DRAWING UPON COMPLETION OF WORK. SEE CONDUIT AND CABLE SCHEDULES SHEETS 11, 12, 13, 16, 17, AND 19.

2. THIS DRAWING DEPICTS EXTERNAL CABLE CONNECTIONS TO THE PANELS. INTERNAL CABLE CONNECTIONS (CABLES WITHIN PANELS AND BETWEEN PANELS) ARE NOT SHOWN, AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SYMBOL	ZONE	DESCRIPTION	DATE	BY

REVISIONS

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE

PANELS 2F & 2R
CONNECTION DIAGRAMS

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-72

SCALE: SHEET 88

11 Mar 2003
11:44:39

HAP103TB.DGN HAP103E72.DGN

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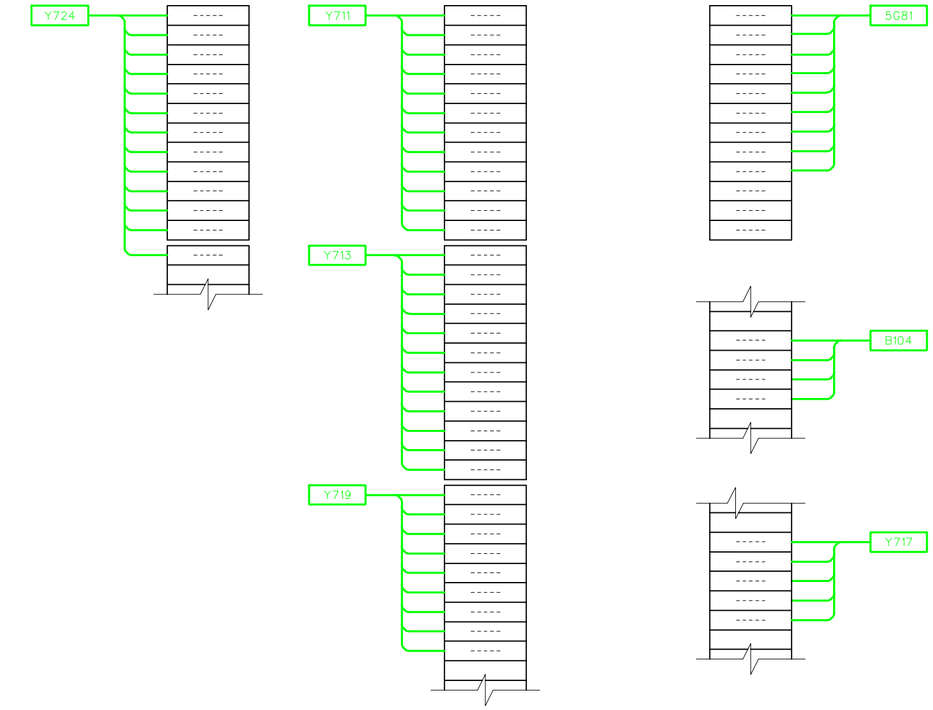
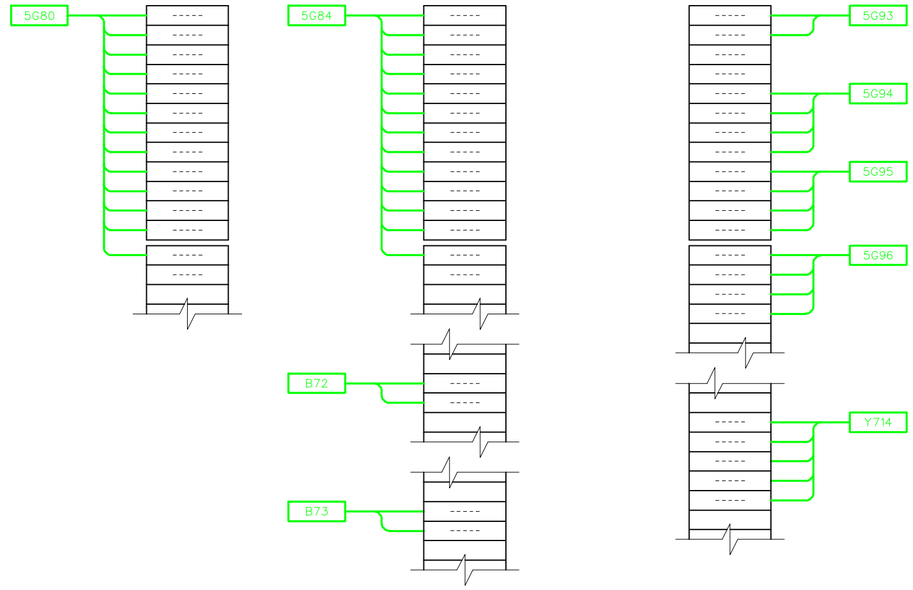
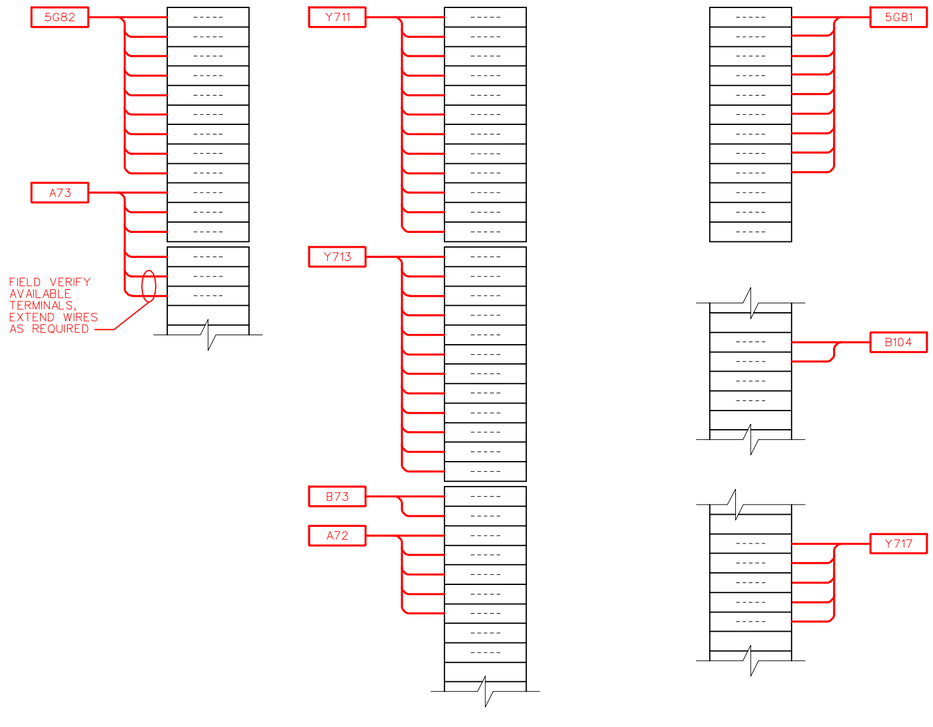


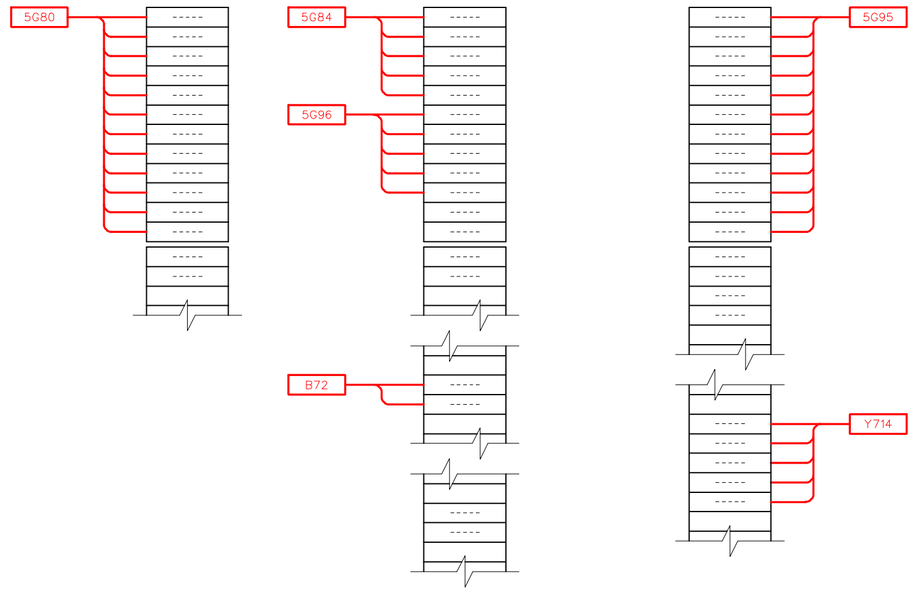
PANEL 1F
CONNECTIONS
EXISTING



PANEL 1R
CONNECTIONS
EXISTING



PANEL 1F
CONNECTIONS
NEW



PANEL 1R
CONNECTIONS
NEW

REFERENCE DRAWINGS

NOT AVAILABLE

NOTES:

1. REFERENCE DRAWINGS FOR THESE PANELS ARE NOT AVAILABLE. THIS DRAWING IS BASED ON SIMILAR PANELS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK, INCLUDING ALL TERMINAL BLOCKS, CABLES, CABLE DESIGNATIONS, CONNECTIONS, AND WIRE DESIGNATIONS. PROVIDE AS-BUILT CORRECTIONS TO THIS DRAWING UPON COMPLETION OF WORK. SEE CONDUIT AND CABLE SCHEDULES SHEETS 14, 15, 17, 18, AND 19.
2. THIS DRAWING DEPICTS EXTERNAL CABLE CONNECTIONS TO THE PANELS. INTERNAL CABLE CONNECTIONS (CABLES WITHIN PANELS AND BETWEEN PANELS) ARE NOT SHOWN, AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. DISCONNECT AND RECONNECT EXISTING WIRING, RELABEL IF NECESSARY, FIELD VERIFY.

SYMBOL	ZONE	DESCRIPTION	DATE	BY

REVISIONS

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
PANELS 1F & 1R
CONNECTION DIAGRAMS
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-73

SCALE: SHEET 89

HAP103TB.DGN HAP103E73.DGN

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BAY 2
XFMR 1

CONDUIT			CABLE					DESCRIPTION				ROUTING AND REMARKS
NUMBER	SIZE	LGTH	NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLT	CABLE FUNCTION	FROM	TO	
Y211	2 1/2	68								OCB NO.128 CNTL CABINET	CABLE TUNNEL	
			Y211	12	19/25		636		TRANSFORMER NO.1 MAIN BUS OCB CONTROL	OCB NO.128 CNTL CABINET	MAIN CONTROL SWBD PNL. 6F	Y211, TRAY DC7, DC5, AC34
Y211	2 1/2	68								GCB NO.128 CNTL CABINET	CABLE TUNNEL	
			Y211	12	12		636		TRANSFORMER NO.1 MAIN BUS GCB CONTROL	GCB NO.128 CNTL CABINET	MAIN CONTROL SWBD PNL. 6F	Y211, TRAY DC7, DC5, AC34
			B23	5	10		626		TRANSFORMER NO.1 MAIN BUS GCB DC POWER	125V DC DIST SWBD	GCB 128 CNTL CAB	Y211, TRAY DC3, 10, 11
			A58	5	12		636		ANNUNCIATION	GCB NO.128 CNTL CAB	MAIN CNTL SWBD PNL 6F	Y211, TRAY DC11
Y211A	2 1/2	68							SPARE	GCB NO.128 CNTL CAB	CABLE TUNNEL	
Y213	2 1/2	28								OCB NO.118 CNTL CAB	CABLE TUNNEL	
			Y213	12	19/25		606		TRANSFORMER NO.1 AUX BUS OCB CONTROL	OCB NO.118 CNTL CAB	MAIN CNTL SWBD PNL 6F	Y213, TRAY DC7, DC5, AC34
Y213	2 1/2	30								GCB NO.118 CNTL CAB	CABLE TUNNEL	
			Y213	12	12		606		TRANSFORMER NO.1 AUX BUS GCB CONTROL	GCB NO.118 CNTL CAB	MAIN CNTL SWBD PNL 6F	Y213, TRAY DC7, DC5, AC34
			B24	2	10		600		TRANSFORMER NO.1 AUX BUS GCB DC POWER	125 VDC DIST SWBD	GCB NO.118 CNTL CAB	Y213, TRAY DC3, 10, 11
			A57	5	12		606		ANNUNCIATION	GCB NO.118 CNTL CAB	MAIN CNTL SWBD PNL 6F	Y213, TRAY DC22
Y213A	2 1/2	30							SPARE	GCB NO.118 CNTL CAB	CABLE TUNNEL	
Y214	2 1/2	68								OCB NO.128 CNTL CAB	CABLE TUNNEL	
			Y214	5	19/25		636		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	OCB NO.128 CNTL CAB	MAIN CNTL SWBD PNL 6R	Y214, TRAY AC8, AC7, AC5
Y214	2	68								GCB NO.128 CNTL CAB	CABLE TUNNEL	
			Y214	5	10		636		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB NO.128 CNTL CAB	MAIN CNTL SWBD PNL 6R	Y214, TRAY AC8, AC7, AC5
			Y215	5	10		105		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB NO.118 CNTL CAB	GCB NO.128 CNTL CAB	Y217, Y214
			Y216	5	10		197		MAIN BUS DIFFERENTIAL RELAY CT LEADS	GCB NO.128 CNTL CAB	MAIN BUS DIFF CT BOX Y4	Y214, TRAY AC8
Y215	1 1/2	85								OCB NO.118 CNTL CAB	CABLE TUNNEL	
			Y215	5	19/22		105		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	OCB NO.118 CNTL CAB	OCB NO.128 CNTL CAB	Y215
Y216	2	68								OCB NO.128 CNTL CAB	CABLE TUNNEL	
			Y216	7	19/22		197		BUS DIFFERENTIAL RELAY CT LEADS	OCB NO.128 CNTL CAB	BUS DIFF CT BOX Y4	Y216, TRAY AC8
Y217	1 1/2	28								OCB NO.118 CNTL CAB	CABLE TUNNEL	
			Y217	5	19/22		606		TRANSFORMER NO.1 METERING CT LEADS	OCB NO.118 CNTL CAB	MAIN CNTL SWBD PNL 6F	Y217, TRAY AC8, AC7, AC5
Y217	2	28								GCB NO.118 CNTL CAB	CABLE TUNNEL	
			Y217	5	10		606		TRANSFORMER NO.1 METERING CT LEADS	GCB NO.118 CNTL CAB	MAIN CNTL SWBD PNL 6F	Y217, TRAY AC8, AC7, AC5
			Y218	5	10		220		AUX BUS DIFFERENTIAL RELAY CT LEADS	GCB NO.118 CNTL CAB	AUX BUS DIFF CT BOX Y5	Y217, TRAY AC8
			Y215	5	10		105		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB NO.118 CNTL CAB	GCB NO.128 CNTL CAB	Y217, Y214
Y218	1 1/2	28								OCB NO.118 CNTL CAB	CABLE TUNNEL	
			Y218	5	19/22		606		TRANSFORMER NO.1 LINE RELAY CT LEADS	OCB NO.118 CNTL CAB	MAIN CNTL SWBD PNL 5F	Y218, TRAY AC8, AC7, AC5

SYMBOL	ZONE	DESCRIPTION	DATE	BY
		REVISIONS		

HYDROELECTRIC DESIGN CENTER
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CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 1
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE F | SOLICITATION NO. DACW21-03-B-0007 | FILE NO. HAR0157 | PLATE E-74
SCALE: NONE | SHEET 90

102TBLK.HAP HAP103G74.DGN

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BAY 2
XFMR 1

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	CABLE NO. COND.	CABLE GAUGE	INSUL	RUN LGTH	OP-VOLT	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y219	2	28								OCB NO. 118 CNTL CAB	CABLE TUNNEL	
			Y219	9	19/25		606		TRANSFORMER NO. 1 METERING PT LEADS	OCB NO. 118 CNTL CAB	MAIN CNTL SWBD PNL 6F	Y219, TRAY AC8, AC7, AC5
Y220	1	68								OCB NO. 128 CNTL CAB	CABLE TUNNEL	
			Y220	4	10		720		TRANSFORMER NO. 1 BUS OCB AC POWER	OCB NO. 128 CNTL CAB	SWYD LOAD CENTER	Y220, TRAY AC8
Y220	2	68								GCB NO. 128 CNTL CAB	CABLE TUNNEL	
			Y220	2	10		175		TRANSFORMER NO. 1 MAIN BUS GCB AUXILLIARIES AC POWER	GCB NO. 128 CNTL CAB	SWYD LOAD CENTER	Y220, TRAY AC8
			Y220A	2	10		175		TRANSFORMER NO. 1 MAIN BUS GCB CAPACITIVE TRIP AC POWER	GCB NO. 128 CNTL CAB	SWYD LOAD CENTER	Y220, TRAY AC8
Y221	1	68								OCB 128 CNTL CAB	CABLE TUNNEL	
			(B23)	2	19/22		626		TRANSFORMER NO. 1 MAIN BUS OCB DC POWER	125V DC DIST SWBD	OCB 128 CNTL CAB	SEE B23
Y222	1	28								OCB NO. 118 CNTL CAB	CABLE TUNNEL	
			Y222	4	10		620		TRANSFORMER NO. 1 AUX BUS OCB AC POWER	OCB NO. 118 CNTL CAB	SWYD LOAD CENTER	Y222, TRAY AC8
Y222	2	28								CABLE TUNNEL	GCB NO. 118 CNTL CAB	
			Y222	2	10		130		TRANSFORMER NO. 1 AUX BUS GCB AUXILLIARIES AC POWER	SWYD LOAD CENTER	GCB NO. 118 CNTL CAB	Y222, TRAY AC8
			Y222A	2	10		130		TRANSFORMER NO. 1 AUX BUS GCB CAPACITIVE TRIP AC POWER	SWYD LOAD CENTER	GCB NO. 118 CNTL CAB	Y222, TRAY AC8
Y223	1	28								OCB NO. 118 CNTL CAB	CABLE TUNNEL	
			B24	2	19/22		596		TRANSFORMER NO. 1 AUX BUS OCB DC POWER	OCB NO. 118 CNTL CAB	125 VDC DIST SWBD	SEE B24
Y224	2	28								OCB NO. 118 CNTL CAB	CABLE TUNNEL	
			Y224	7	19/25		50		MOD INTERLOCKS	OCB NO. 118 CNTL CAB	TERM BOX Y1	Y224, TRAY DC11
Y225	2	68								OCB NO. 128 CNTL CAB	CABLE TUNNEL	
			(A58)						ANNUNCIATION	OCB NO. 128 CNTL CAB	ANNUN RELAY CAB	SEE CABLE A58
Y226	2	28								OCB NO. 118 CNTL CAB	CABLE TUNNEL	
			(A57)						ANNUNCIATION	OCB NO. 118 CNTL CAB	ANNUN RELAY CAB	SEE CABLE A57

SYMBOL	ZONE	DESCRIPTION	DATE	BY
		REVISIONS		

HYDROELECTRIC DESIGN CENTER
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CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE

CONDUIT AND CABLE SCHEDULE
SHEET 2

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-75

SCALE: NONE SHEET 91

28 Feb 2003
153457

103TBLK.HAP HAP103G75.DGN

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BAY 3
LINE 2

CONDUIT			CABLE					DESCRIPTION				ROUTING AND REMARKS
NUMBER	SIZE	LGTH	NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLT	CABLE FUNCTION	FROM	TO	
Y311	2 1/2	68								OCB NO. 248 CNTL CAB	CABLE TUNNEL	
			Y311	5	19/25		690		LINE 2 OCB CONTROL	OCB NO. 248 CNTL CAB	MAIN CNTL SWBD PNL 5F	Y311, TRAY DC7, DC5, AC34
Y311	2 1/2	68								GCB NO. 248 CNTL CAB	CABLE TUNNEL	
			Y311	12	12		690		LINE 2 MAIN BUS GCB CONTROL	GCB NO. 248 CNTL CAB	MAIN CNTL SWBD PNL 5F	Y311, TRAY DC7, DC5, AC34
			A59	5	12		690		ANNUNCIATION	GCB NO. 248 CNTL CAB	MAIN CNTL SWBD PNL 5F	TRAY DC11, Y311
			B37	2	10		690		LINE 2 MAIN BUS GCB DC POWER SUPPLY	125 VDC DIST SWBD	GCB NO. 248 CNTL CAG	TRAY DC3, 10, 11, Y311
Y311A	2 1/2	68							SPARE	GCB NO. 248 CNTL CAB	CABLE TUNNEL	
Y312	2 1/2	30								GCB NO. 238 CNTL CAB	CABLE TUNNEL	
			Y312	12	12		660		LINE 2 AUX BUS GCB CONTROL	GCB NO. 238 CNTL CAB	MAIN CNTL SWBD PNL 5F	Y312, TRAY DC7, DC5, AC34
			A68	5	12		670		ANNUNCIATION	GCB NO. 238 CNTL CAB	MAIN CNTL SWBD PNL 5F	TRAY DC11, Y312
			B84	2	10		700		LINE 2 AUX BUS GCB DC SUPPLY	125 VDC DIST SWBD	GCB NO. 238 CNTL CAB	TRAY DC3, 10, 11, Y312
Y312A	2 1/2	30							SPARE	GCB NO. 238 CNTL CAB	CABLE TUNNEL	
Y313	2	68								OCB NO. 248 CNTL CAB	CABLE TUNNEL	
			Y313	7	19/22		145		BUS DIFFERENTIAL RELAY CT LEADS	OCB NO. 248 CNTL CAB	BUS DIFF CT BOX Y4	Y313, AC8
Y313	2	68								GCB NO. 248 CNTL CAB	CABLE TUNNEL	
			Y313	5	10		145		MAIN BUS DIFFERENTIAL RELAY CT LEADS	GCB NO. 248 CNTL CAB	MAIN BUS DIFF CT BOX Y4	Y313, AC8
			Y315	5	10		690		LINE 2 RELAYS CT LEADS	GCB NO. 248 CNTL CAB	MAIN CNTL SWBD PNL 5R	Y313, TRAY AC8, DC7, AC5
			Y321	5	10		100		LINE 2 RELAYS CT LEADS	GCB NO. 238 CNTL CAB	GCB NO. 248 CNTL CAB	Y321, Y313
Y314	1 1/2	68								OCB NO. 248 CNTL CAB	CABLE TUNNEL	
			Y314	5	19/22		690		LINE 2 METERING CT LEADS	OCB NO. 248 CNTL CAB	MAIN CNTL SWBD PNL 5F	Y314,TRAY AC8, DC7, AC5
Y315	1 1/2	68								OCB NO. 248 CNTL CAB	CABLE TUNNEL	
			Y315	5	19/22		690		LINE 2 RELAYS CT LEADS	OCB NO. 248 CNTL CAB	MAIN CNTL SWBD PNL 5F	Y315, TRAY AC8, DC7, AC5
Y316	1 1/2	20								CT PHASE B	CABLE TUNNEL	
			Y316	5	19/22		615		LINE 2 REVENUE METERING CT LEADS	CT PHASE B	RECORDER BD PNL 1R	Y316, TRAY AC8, R6
Y316	2	20								CT PHASE B	CABLE TUNNEL	
			Y316	5	10		615		LINE 2 METERING CT LEADS	CT PHASE B	MAIN CNTL SWBD PNL 5F	Y316, TRAY AC8, R6
Y316A	1 1/2	23								CT PHASE B	CT PHASE A	
			Y316A	3	19/22		23		LINE 2 CT LEADS PHASE A TO PHASE B	CT PHASE B	CT PHASE A	Y316A
Y316A	2	23								CT PHASE B	CT PHASE A	
			Y316A	3	10		30		LINE 2 CT LEADS PHASE A TO PHASE B	CT PHASE B	CT PHASE A	Y316A
Y316B	1 1/2	23								CT PHASE B	CT PHASE C	
			Y316B	5	19/22		23		LINE 2 CT LEADS PHASE C TO PHASE B	CT PHASE B	CT PHASE C	Y316B

SYMBOL	ZONE	DESCRIPTION	DATE	BY
		REVISIONS		

HYDROELECTRIC DESIGN CENTER
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SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 3
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-76

SCALE: NONE SHEET 92

28 Feb 2003
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BAY 3
LINE 2

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	CABLE NO. COND.	CABLE GAUGE	INSUL	RUN LGTH	OP-VOLT	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y316B	2	23								CT PHASE B	CT PHASE C	
			Y316B	5	10		30		LINE 2 CT LEADS PHASE C TO PHASE B	CT PHASE B	CT PHASE C	Y316B
Y317	2	42								CCVT PHASE B	CABLE TUNNEL	
			Y317	9	19/25		680		LINE 2 RELAY AND IND.PT LEADS	CCVT PHASE B	POT ADJ UNIT SPREAD EM	Y317, TRAY AC8, AC9
Y317	2	42								PT PHASE B	CABLE TUNNEL	
			Y317	9	12		680		LINE 2 RELAY AND IND.PT LEADS	PT PHASE B	MAIN CNTL SWBD PNL 5F	Y317, TRAY AC8, AC9
Y317A	1 1/2	23								CCVT PHASE B	CCVT PHASE A	
			Y317A	3	19/25		23		LINE 2 PT LEADS	CCVT PHASE B	CCVT PHASE A	Y317A
Y317A	2	23								PT PHASE B	PT PHASE A	
			Y317A	3	12		30		LINE 2 PT LEADS	PT PHASE B	PT PHASE A	Y317A
Y317C	1 1/2	23								CCVT PHASE B	CCVT PHASE C	
			Y317C	3	19/25		23		LINE 2 PT LEADS	CCVT PHASE B	CCVT PHASE C	Y317C
Y317C	2	23								PT PHASE B	PT PHASE C	
			Y317C	3	12		30		LINE 2 PT LEADS	PT PHASE B	PT PHASE C	Y317C
NONE												
			Y318	5	19/25		46		LINE 2 RELAY AND IND.PT LEADS	POT ADJ UNIT SPREAD RM	MAIN CNTL SWBD PNL 5F	TRAY AC9, AC8, R6
NONE												
			Y319	2	19/25		46		LINE 2 RELAY POLARIZING PT LEADS	POT ADJ UNIT SPREAD RM	MAIN CNTL SWBD PNL 5R	TRAY AC9, AC8, R6
Y320	1 1/2	24								PT PHASE C	CABLE TUNNEL	
			Y320	5	19/25		700		LINE 2 REVENUE METERING PT LEADS	PT PHASE C	RECORDER BD PNL 1R	Y320, AC8, R6
Y321	2	53										
			Y321	9	19/25		680		LINE 2 MOD CONTROL	MOD NO. 237 CNTL CAB	MAIN CNTL SWBD PNL 5F	Y321, DC7, DC5, AC34
Y321	2	68								GCB NO. 238	CABLE TUNNEL	
			Y321	5	10		100		LINE 2 RELAYS CT LEADS	GCB NO. 238 CNTL CAB	GCB NO. 248 CNTL CAB	Y321, Y313
			Y323	5	10		200		AUX BUS DIFFERENTIAL RELAY CT LEADS	GCB 238 CNTL CAB	AUX BUS DIFF CT BOX Y5	Y321, TRAY AC8
Y322	2	68								OCB NO. 248 CNTL CAB	CABLE TUNNEL	
			A59	5	19/25		660		ANNUNCIATION	OCB NO. 248 CNTL CAB	ANNUN RELAY CAB	SEE CABLE A59
Y323	2	53								MOD NO. 237 CNTL CAB	CABLE TUNNEL	
			Y323	7	19/25		85		MOD INTERLOCKS	MOD NO. 237 CNTL CAB	TERM BOX Y1	Y323, TRAY DC11
			B84	2	19/22		675		LINE 2 MOD DC POWER SUPPLY	MOD NO. 237 CNTL CAB	125 VDC DIST SWBD	
Y324X	2	20								CT PHASE A	CABLE TUNNEL	
Y325X	2	20								CT PHASE B	CABLE TUNNEL	
Y326X	2	20								CT PHASE C	CABLE TUNNEL	
Y327X	2	42								CCVT PHASE B	CABLE TUNNEL	

SYMBOL	ZONE	DESCRIPTION	DATE	BY
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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE

CONDUIT AND CABLE SCHEDULE
SHEET 4

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-77

SCALE: NONE SHEET 93

28 Feb 2003
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BAY 3
LINE 2

NUMBER	CONDUIT SIZE	LGTH	NUMBER	CABLE NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLT	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y328	1	68								CABLE TUNNEL	OCB NO. 248 CNTL CAB	
			Y328	4	10		520		LINE 2 OCB AC POWER SUPPLY	SWYD LOAD CENTER	OCB NO. 248 CNTL CAB	Y328, TRAY AC8
Y328	2	68								CABLE TUNNEL	GCB NO. 248 CNTL CAB	
			Y328	2	10		130		LINE 2 MAIN BUS GCB AUXILLIARIES AC POWER SUPPLY	SWYD LOAD CENTER	GCB NO. 248 CNTL CAB	Y328, TRAY AC8
			Y328A	2	10		130		LINE 2 MAIN BUS GCB CAPACITIVE TRIP AC POWER SUPPLY	SWYD LOAD CENTER	GCB NO. 248 CNTL CAB	Y328, TRAY AC8
Y329	1	68										
			B37	2	19/22		690		LINE 2 OCB DC POWER SUPPLY	125 VDC DIST SWBD	OCB NO. 248 CNTL CAG	SEE CABLE B37
Y330X	2	24								PT PHASE A	CABLE TUNNEL	
Y331X	2	30								PT PHASE C	CABLE TUNNEL	
Y332	1	24										
			Y332	2	10		214		LINE 2 MOD AC POWER SUPPLY	MOD NO. 237 CNTL CAB	SWYD LOAD CENTER	Y332, TRAY AC7
Y332	2	30								CABLE TUNNEL	GCB NO. 238 CNTL CAB	
			Y332	2	10		80		LINE 2 AUX BUS GCB AUXILLIARIES AC SUPPLY	SWYD LOAD CENTER	GCB NO. 238 CNTL CAB	Y332, TRAY AC7
			Y332A	2	10		80		LINE 2 AUX BUS GCB CAPACITIVE TRIP AC SUPPLY	SWYD LOAD CENTER	GCB NO. 238 CNTL CAB	Y332, TRAY AC7
TRAY												
			Y333	4	19/25		40		LINE 2 THERMAL CONV MILLIVOLT LEADS	MAIN CNTL SWBD PNL 5F	RECORDER BD PNL 3R	TRAY R6
Y342	2	40										
			Y342	1	RG-8/U				CARRIER CURRENT EQUIPMENT	CCVT PHASE A	COMM EQUIP RM REL CAB 2	Y342, TRAY DC11, CC23
Y343X	2	40										
									FUTURE COMM	CCVT PHASE B	CABLE TUNNEL	
Y344X	2	40										
									FUTURE COMM	CCVT PHASE C	CABLE TUNNEL	

SYMBOL	ZONE	DESCRIPTION	DATE	BY
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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE

CONDUIT AND CABLE SCHEDULE
SHEET 5

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-78

SCALE: NONE SHEET 94

20 Feb 2003
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BAY 4
XFMR 2

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	CABLE NO. COND.	CABLE GAUGE	CABLE INSUL	CABLE RUN LGTH	DESCRIPTION OP-VOLT	DESCRIPTION CABLE FUNCTION	DESCRIPTION FROM	DESCRIPTION TO	ROUTING AND REMARKS
Y411	2	68								OCB NO.228 CNTL CAB	CABLE TUNNEL	
			Y411	12	19/25		740		TRANSFORMER NO.2 MAIN BUS OCB CONTROL	OCB NO.228 CNTL CAB	MAIN CNTL SWBD PNL 4F	Y411, TRAY DC7, DC5, AC34
Y411	2	68								GCB NO.228 CNTL CAB	CABLE TUNNEL	
			Y411	12	12		740		TRANSFORMER NO.2 MAIN BUS GCB CONTROL	GCB NO.228 CNTL CAB	MAIN CNTL SWBD PNL 4F	Y411, TRAY DC7, DC5, AC34
			B32	2	10		850		TRANSFORMER NO.2 MAIN BUS GCB DC POWER	OCB NO.228 CNTL CAB	125 VDC DIST SWBD	TRAY DC03, 10, 11, Y411
			A61	5	12		740		ANNUNCIATION	GCB NO.228 CNTL CAB	MAIN CNTL SWBD PNL 4F	TRAY DC11, Y411
Y411A	2	68							SPARE	GCB NO.228 CNTL CAB	CABLE TUNNEL	
Y413	2 1/2	28								OCB NO.218 CNTL CAB	CABLE TUNNEL	
			Y413	12	19/25		710		TRANSFORMER NO.2 AUX BUS OCB CONTROL	OCB NO.218 CNTL CAB	MAIN CNTL SWBD PNL 4F	Y413, TRAY DC7, DC5, AC34
Y413	2 1/2	28								GCB NO.218 CNTL CAB	CABLE TUNNEL	
			Y413	12	12		710		TRANSFORMER NO.2 AUX BUS GCB CONTROL	GCB NO.218 CNTL CAB	MAIN CNTL SWBD PNL 4F	Y413, TRAY DC7, DC5, AC34
			B33	2	10		800		TRANSFORMER NO.2 AUX BUS GCB DC POWER	GCB NO.218 CNTL CAB	125 VDC DIST SWBD	TRAY DC03, 10, 11, Y413
			A60	5	12		710		ANNUNCIATION	GCB NO.218 CNTL CAB	MAIN CNTL SWBD PNL 4F	TRAY DC11, Y413
Y413A	2 1/2	28							SPARE	GCB NO.218 CNTL CAB	CABLE TUNNEL	
Y414	1 1/2	68								OCB NO.228 CNTL CAB	CABLE TUNNEL	
			Y414	5	19/22		740		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	OCB NO.228 CNTL CAB	MAIN CNTL SWBD PNL 4R	Y414, TRAY AC7, AC5
Y414	1 1/2	68								GCB NO.228 CNTL CAB	CABLE TUNNEL	
			Y414	5	10		740		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB NO.228 CNTL CAB	MAIN CNTL SWBD PNL 4R	Y414, TRAY AC7, AC5
			Y415	5	10		105		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB 218 CNTL CAB	GCB 228 CNTL CAB	Y414
			Y416	5	10		93		MAIN BUS DIFFERENTIAL RELAY CT LEADS	GCB NO.228 CNTL CAB	MAIN BUS DIFF CT BOX Y4	Y416, TRAY AC8
Y415	1 1/2	85								OCB 218 CNTL CAB	CABLE TUNNEL	
			Y415	5	19/22		105		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	OCB 218 CNTL CAB	OCB 228 CNTL CAB	Y415
Y416	2	68								OCB NO.228 CNTL CAB	CABLE TUNNEL	
			Y416	7	19/22		93		BUS DIFFERENTIAL RELAY CT LEADS	OCB NO.228 CNTL CAB	BUS DIFF CT BOX Y4	Y416, TRAY AC8
Y417	1 1/2	28								OCB NO.218 CNTL CAB	CABLE TUNNEL	
			Y417	5	19/22		710		TRANSFORMER NO.2 METERING CT LEADS	OCB NO.218 CNTL CAB	MAIN CNTL SWBD PNL 4F	Y417, TRAY AC7, AC5
Y417	1 1/2	28								GCB NO.218 CNTL CAB	CABLE TUNNEL	
			Y417	5	10		710		TRANSFORMER NO.2 METERING CT LEADS	GCB NO.218 CNTL CAB	MAIN CNTL SWBD PNL 4F	Y414, TRAY AC7, AC5
			Y415	5	10		105		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB 218 CNTL CAB	GCB 228 CNTL CAB	Y417, Y414
			Y418	5	10		60		AUX BUS DIFFERENTIAL RELAY CT LEADS	GCB NO.218 CNTL CAB	AUX BUS DIFF CT BOX Y5	Y417, TRAY AC7, AC5
Y418	1 1/2	28								OCB NO.218 CNTL CAB	CABLE TUNNEL	
			Y418	5	19/22		710		TRANSFORMER NO.2 LINE RELAY CT LEADS	OCB NO.218 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y418, TRAY AC7, AC5

SYMBOL	ZONE	DESCRIPTION	DATE	BY
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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 6
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-79

SCALE: NONE SHEET 95

20 Feb 2003

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BAY 4
XFMR 2

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLT	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y419	2	28								OCB NO. 218 CNTL CAB	CABLE TUNNEL	
			Y419	9	19/22		710		TRANSFORMER NO. 2 METERING PT LEADS	OCB NO. 218 CNTL CAB	MAIN CNTL SWBD PNL 4F	Y419, TRAY AC7, AC5
Y420	1	68								OCB NO. 228 CNTL CAB	CABLE TUNNEL	
			Y420	4	10		300		TRANSFORMER NO. 2 MAIN BUS OCB AC POWER	OCB NO. 228 CNTL CAB	SWYD LOAD CENTER	Y420, TRAY AC7
Y420	1	68								GCB NO. 228 CNTL CAB	CABLE TUNNEL	
			Y420	2	10		95		TRANSFORMER NO. 2 MAIN BUS GCB AUXILLIARIES AC POWER	GCB NO. 228 CNTL CAB	SWYD LOAD CENTER	Y420, TRAY AC7
			Y420A	2	10		95		TRANSFORMER NO. 2 MAIN BUS GCB CAPACITIVE TRIP AC POWER	GCB NO. 228 CNTL CAB	SWYD LOAD CENTER	Y420, TRAY AC7
Y421	1	68								OCB NO. 228 CNTL CAB	CABLE TUNNEL	
			B32						TRANSFORMER NO. 2 MAIN BUS OCB DC POWER	OCB NO. 228 CNTL CAB	125 VDC DIST SWBD	SEE CABLE B32
Y422	1	28								OCB NO. 218 CNTL CAB	CABLE TUNNEL	
			Y422	4	10		200		TRANSFORMER NO. 2 AUX BUS OCB AC POWER	OCB NO. 218 CNTL CAB	SWYD LOAD CENTER	Y422, TRAY AC7
Y422	1	28								GCB NO. 218 CNTL CAB	CABLE TUNNEL	
			Y422	2	10		50		TRANSFORMER NO. 2 AUX BUS GCB AUXILLIARIES AC POWER	GCB NO. 218 CNTL CAB	SWYD LOAD CENTER	Y422, TRAY AC7
			Y422A	2	10		50		TRANSFORMER NO. 2 AUX BUS GCB CAPACITIVE TRIP AC POWER	GCB NO. 218 CNTL CAB	SWYD LOAD CENTER	Y422, TRAY AC7
Y423	1	28								OCB NO. 218 CNTL CAB	CABLE TUNNEL	
			B33						TRANSFORMER NO. 2 AUX BUS OCB DC POWER	OCB NO. 218 CNTL CAB	125 VDC DIST SWBD	SEE CABLE B33
Y424	2	28								OCB NO. 218 CNTL CAB	CABLE TUNNEL	
			Y424	7	19/25		92		MOD INTERLOCKS	OCB NO. 218 CNTL CAB	TERM BOX Y2	Y424, TRAY DC11
Y425	2	68								OCB NO. 228 CNTL CAB	CABLE TUNNEL	
			A61						ANNUNCIATION			SEE CABLE A61
Y426	2	68								OCB NO. 218 CNTL CAB	CABLE TUNNEL	
			A60						ANNUNCIATION			SEE CABLE A60

SYMBOL	ZONE	DESCRIPTION	DATE	BY
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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE

CONDUIT AND CABLE SCHEDULE
SHEET 7

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-80

SCALE: NONE SHEET 96

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BAY 5
LINE 3

CONDUIT			CABLE					DESCRIPTION				ROUTING AND REMARKS
NUMBER	SIZE	LGTH	NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	CABLE FUNCTION	FROM	TO	
Y511	2 1/2	68								OCB NO. 348 CNTL CAB	CABLE TUNNEL	
			Y511	12	19/25		794		LINE 3 OCB CONTROL	OCB NO. 348 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y511, TRAY DC7, DC5, AC34
Y511	2 1/2	68								GCB NO. 348 CNTL CAB	CABLE TUNNEL	
			Y511	12	12		794		LINE 3 MAIN BUS GCB CONTROL	GCB NO. 348 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y511, TRAY DC7, DC5, AC34
			A62	5	12		794		ANNUNCIATION	GCB NO. 348 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y511, TRAY DC11
			B39	2	10		750		LINE 3 MAIN BUS GCB DC POWER SUPPLY	125 VDC DIST SWBD	GCB NO. 348 CNTL CAB	TRAY DC3, 10, 11, Y511
Y511A	2 1/2	68							SPARE	GCB NO. 348 CNTL CAB	CABLE TUNNEL	
Y512	2 1/2	40								GCB NO. 338 CNTL CAB	CABLE TUNNEL	
			Y512	12	12		750		LINE 3 AUX BUS GCB CONTROL	GCB NO. 338 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y512, TRAY DC7, DC5, AC34
			A69	5	12		750		ANNUNCIATION	GCB NO. 338 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y512, TRAY DC11
			B85	2	10		700		LINE 3 AUX BUS GCB DC SUPPLY	125 VDC DIST SWBD	GCB NO. 338 CNTL CAB	TRAY DC3, 10, 11, Y512
Y512A	2 1/2	40							SPARE	GCB NO. 338 CNTL CAB	CABLE TUNNEL	
Y513	2	68								OCB NO. 348 CNTL CAB	CABLE TUNNEL	
			Y513	7	19/22		100		BUS DIFFERENTIAL RELAY CT LEADS	OCB NO. 348 CNTL CAB	BUS DIFF CT BOX Y4	Y513, TRAY AC8
Y513	2	68								GCB NO. 348 CNTL CAB	CABLE TUNNEL	
			Y513	5	10		100		MAIN BUS DIFFERENTIAL RELAY CT LEADS	GCB NO. 348 CNTL CAB	MAIN BUS DIFF CT BOX Y4	Y513, TRAY AC8
			Y515	5	10		94		LINE 3 RELAYS CT LEADS	GCB NO. 348 CNTL CAB	MAIN CNTL SWBD PNL 3R	Y513, TRAY AC7, AC5
			Y521	5	10		100		LINE 3 RELAYS CT LEADS	GCB NO. 338 CNTL CAB	GCB NO. 348 CNTL CAB	Y513, Y521
Y514	1 1/2	68								OCB NO. 348 CNTL CAB	CABLE TUNNEL	
			Y514	5	19/22		794		LINE 3 METERING CT LEADS	OCB NO. 348 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y514, TRAY AC7, AC5
Y515	1 1/2	68								OCB NO. 348 CNTL CAB	CABLE TUNNEL	
			Y515	5	19/22		94		LINE 3 RELAYS CT LEADS	OCB NO. 348 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y515, TRAY AC7, AC5
Y516	1 1/2	20								CT PHASE B	CABLE TUNNEL	
			Y516	5	19/22		719		LINE 3 REVENUE METERING CT LEADS	CT PHASE B	RECORDER BD PNL 1R	Y516, TRAY AC8, R6
Y516	2	20								CT PHASE B	CABLE TUNNEL	
			Y516	5	10		719		LINE 3 METERING CT LEADS	CT PHASE B	MAIN CNTL SWBD PNL 3F	Y516, TRAY AC8, R6
Y516A	1 1/2	23								CT PHASE B	CT PHASE A	
			Y516A	3	19/22		23		CT LEADS	CT PHASE B	CT PHASE A	Y516A
Y516A	2	23								CT PHASE B	CT PHASE A	
			Y516A	3	10		30		CT LEADS	CT PHASE B	CT PHASE A	Y516A
Y516C	1 1/2	23								CT PHASE B	CT PHASE C	
			Y516C	3	19/22		23		CT LEADS	CT PHASE B	CT PHASE C	Y516C

SYMBOL	ZONE	DESCRIPTION	DATE	BY
		REVISIONS		

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PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 8
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-81

SCALE: NONE SHEET 97

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BAY 5
LINE 3

NUMBER	CONDUIT SIZE	LGTH	NUMBER	NO. COND.	CABLE GAUGE	INSUL	RUN LGTH	OP-VOLTS	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y516C	2	23								CT PHASE B	CT PHASE C	
			Y516C	3	10		30		CT LEADS	CT PHASE B	CT PHASE C	Y516C
Y517	2	42								CCVT PHASE B	CABLE TUNNEL	
			Y517	9	19/25		784		LINE 3 RELAY AND IND PT LEADS	CCVT PHASE B	POT ADJ UNIT SPREAD RM	Y517, TRAY AC8, AC9
Y517	2	42								CCVT PHASE B	CABLE TUNNEL	
			Y517	9	12		784		LINE 3 RELAY AND IND PT LEADS	CCVT PHASE B	MAIN CNTL SWBD PNL 3F	Y517, TRAY AC8, AC9
Y517A	1 1/2	23								CCVT PHASE B	CCVT PHASE A	
			Y517A	3	19/25		23		PT LEADS	CCVT PHASE B	CCVT PHASE A	Y517A
Y517A	2	23								CCVT PHASE B	PT PHASE A	
			Y517A	3	12		30		PT LEADS	CCVT PHASE B	PT PHASE A	Y517A
Y517C	1 1/2	23								CCVT PHASE B	CCVT PHASE C	
			Y517C	3	19/25		23		PT LEADS	CCVT PHASE B	CCVT PHASE C	Y517C
Y517C	2	23								CCVT PHASE B	PT PHASE C	
			Y517C	3	12		30		PT LEADS	CCVT PHASE B	PT PHASE C	Y517C
NONE												
			Y518	5	19/25		42		LINE 3 RELAY AND IND PT LEADS	POT ADJ UNIT SPREAD RM	MAIN CNTL SWBD PNL 3F	TRAY AC9, AC8, R6
NONE												
			Y519	2	19/25		42		LINE 3 RELAY POLARIZING PT LEADS	POT ADJ UNIT SPREAD RM	MAIN CNTL SWBD PNL 3R	TRAY AC9, AC8, R6
Y520	1 1/2	24								PT PHASE C	CABLE TUNNEL	
			Y520	5	19/25		804		LINE 3 REVENUE METERING PT LEADS	PT PHASE C	RECORDER BD PNL 1R	Y520, TRAY AC8, R6
Y520A	1 1/2	36								PT PHASE C	PT PHASE A	
			Y520A	3	19/25		36		PT LEADS	PT PHASE C	PT PHASE A	Y520A
Y521	2	53								MOD NO. 337 CNTL CAB	CABLE TUNNEL	
			Y521	9	19/25		784		LINE 3 MOD CONTROL	MOD NO. 337 CNTL CAB	MAIN CNTL SWBD PNL 3F	Y521, TRAY DC7, DC5, AC34
Y521	2	68								GCB NO. 338 CNTL CAB	CABLE TUNNEL	
			Y521	5	10		100		LINE 3 RELAYS CT LEADS	GCB NO. 338 CNTL CAB	GCB NO. 348 CNTL CAB	Y513, Y521
			Y523	5	10		300		AUX BUS DIFFERENTIAL RELAY CT LEADS	GCB NO. 338 CNTL CAB	AUX BUS DIFF CT BOX Y5	Y521, TRAY AC7
Y522	1 1/2	68								OCB NO. 348 CNTL CAB	CABLE TUNNEL	
			(A62)						ANNUNCIATION			SEE CABLE A62
Y523	2	53								MOD NO. 337 CNTL CAB	CABLE TUNNEL	
			Y523	7	19/25		85		MOD INTERLOCKS	MOD NO. 337 CNTL CAB	TERM BOX Y2	Y523, TRAY DC11
			B85	2	19/22		780		LINE 3 MOD DC POWER SUPPLY	MOD NO. 337 CNTL CAB	125 VDC DIST SWBD	
Y524	2	20								CT PHASE A	CABLE TUNNEL	
Y525X	2	20								CT PHASE B	CABLE TUNNEL	

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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 9
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE F | SOLICITATION NO. DACW21-03-B-0007 | FILE NO. HAR0157 | PLATE E-82
SCALE: NONE | SHEET 98

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BAY 5
LINE 3

NUMBER	CONDUIT SIZE	LGTH	CABLE NUMBER	NO. COND.	CABLE GAUGE	INSUL	RUN LGTH	OP-VOLTS	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y526X	2	20								CT PHASE C	CABLE TUNNEL	
Y527X	2	20								CCVT PHASE B	CABLE TUNNEL	
Y528	1	68								CABLE TUNNEL	OCB NO. 348 CNTL CAB	
			Y528	4	10		520		LINE 3 OCB AC POWER SUPPLY	SWYD LOAD CENTER	OCB NO. 348 CNTL CAB	Y528, TRAY AC7
Y528	2	68								CABLE TUNNEL	GCB NO. 348 CNTL CAB	
			Y528	2	10		150		LINE 3 MAIN BUS GCB AUXILLIARIES AC POWER SUPPLY	SWYD LOAD CENTER	GCB NO. 348 CNTL CAB	Y528, TRAY AC7
			Y528A	2	10		150		LINE 3 MAIN BUS GCB CAPACITIVE TRIP AC POWER SUPPLY	SWYD LOAD CENTER	GCB NO. 348 CNTL CAB	Y528, TRAY AC7
Y529	1	68								CABLE TUNNEL	OCB NO. 348 CNTL CAB	
			B39	2	19/22				LINE 3 OCB DC POWER SUPPLY	125 VDC DIST SWBD	OCB NO. 348 CNTL CAB	SEE CABLE B39
Y530X	2	24								PT PHASE A	CABLE TUNNEL	
Y531X	2	24								PT PHASE C	CABLE TUNNEL	
Y532	1	53								CABLE TUNNEL	MOD NO. 337 CNTL CAB	
			Y532	2	10		220		LINE 3 MOD AC POWER SUPPLY	MOD NO. 337 CNTL CAB	SWYD LOAD CENTER	Y532, TRAY AC7
Y532	2	68								CABLE TUNNEL	GCB NO. 338 CNTL CAB	
			Y532	2	10		110		LINE 3 AUX BUX GCB AUXILLIARIES AC POWER SUPPLY	SWYD LOAD CENTER	GCB NO. 338 CNTL CAB	Y532, TRAY AC7
			Y532A	2	10		110		LINE 3 AUX BUX GCB CAPACITIVE TRIP AC POWER SUPPLY	SWYD LOAD CENTER	GCB NO. 338 CNTL CAB	Y532, TRAY AC7
NONE												
			Y533	4	19/25		52		LINE 3 THERMAL CONV. MILLIVOLT LEADS	MAIN CNTL PNL 3F	RECORDER BD PNL 6R	TRAY R6
Y542	1	40							FUTURE COMMUNICATION (LINE 3)	CCVT PHASE A	CABLE TUNNEL	
Y543	2	40								CCVT PHASE B	CABLE TUNNEL	
			Y543	1	RG-8/U				CARRIER CURRENT EQUIPMENT	CCVT PHASE B	COMM EQUIP RM CARR REL CAB 3	Y543, TRAY DC11, CC33
Y543	2	40								CCVT PHASE B	CABLE TUNNEL	
			Y543	1	RG-8/U		75		CARRIER CURRENT EQUIPMENT	CCVT PHASE B	MAIN CNTL SWBD PNL 3R	Y543, TRAY DC11, CC33
Y544X	2	40							FUTURE COMMUNICATION	CCVT PHASE C	CABLE TUNNEL	

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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 10
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE F | SOLICITATION NO. DACW21-03-B-0007 | FILE NO. HAR0157 | PLATE E-83

SCALE: NONE | SHEET 99

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BAY 6
LINE 4

CONDUIT			CABLE					DESCRIPTION				ROUTING AND REMARKS
NUMBER	SIZE	LGTH	NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLT	CABLE FUNCTION	FROM	TO	
Y611	2 1/2	68								OCB NO. 448 CNTL CAB	CABLE TUNNEL	
			Y611	12	19/25		846		LINE 4 OCB CONTROLS	OCB NO. 448 CNTL CAB	MAIN CNTL SWBD PNL 2R	
			Y611A	4	19/25		846		LINE 4 OCB CONTROLS	OCB NO. 448 CNTL CAB	MAIN CNTL SWBD PNL 2R	
Y611	2 1/2	68								GCB NO. 448 CNTL CAB	CABLE TUNNEL	
			Y611	12	12		846		LINE 4 MAIN BUS GCB CONTROLS	GCB NO. 448 CNTL CAB	MAIN CNTL SWBD PNL 2F	Y611, TRAY DC7, DC5, AC34
			A71	5	12		846		ANNUNCIATION	GCB NO. 448 CNTL CAB	MAIN CNTL SWBD PNL 2F	Y611, TRAY DC3, 10, 11
			B41	2	10		846		LINE 4 MAIN BUS GCB DC POWER SUPPLY	125 VDC DIST SWBD	GCB NO. 448 CNTL CAB	Y611, TRAY DC11
Y611A	2 1/2	68							SPARE	GCB NO. 448 CNTL CAB	CABLE TUNNEL	
Y612	2 1/2	30								GCB NO. 438 CNTL CAB	CABLE TUNNEL	
			Y612	12	12		820		LINE 4 AUX BUS GCB CONTROLS	GCB NO. 438 CNTL CAB	MAIN CNTL SWBD PNL 2F	Y612, TRAY DC7, DC5, AC34
			A70	5	12				ANNUNCIATION	GCB NO. 438 CNTL CAB	MAIN CNTL SWBD PNL 2F	Y612, TRAY DC3, 10, 11
			B86	2	10		800		LINE 4 AUX BUS GCB DC POWER SUPPLY	125 VDC DIST SWBD	GCB NO. 438 CNTL CAB	Y612, TRAY DC11
Y612A	2 1/2	30							SPARE	GCB NO. 438 CNTL CAB	CABLE TUNNEL	
Y613	2	68								OCB NO. 448 CNTL CAB	CABLE TUNNEL	
			Y613	8	19/22		197		BUS DIFFERENTIAL RELAY CT LEADS	OCB NO. 448 CNTL CAB	BUS DIFF CT BOX Y4	
Y613	2	68								GCB NO. 448 CNTL CAB	CABLE TUNNEL	
			Y613	5	10		197		MAIN BUS DIFFERENTIAL RELAY CT LEADS	GCB NO. 448 CNTL CAB	MAIN BUS DIFF CT BOX Y4	Y613, AC8
			Y615	5	10		846		LINE 4 RELAYS CT LEADS	GCB NO. 448 CNTL CAB	MAIN CNTL SWBD PNL 2R	Y613, TRAY AC8, DC7, AC5
			Y621	5	10		100		LINE 4 RELAYS CT LEADS	GCB NO. 438 CNTL CAB	GCB NO. 448 CNTL CAB	Y621, Y613
Y614	1 1/2	68								OCB NO. 448 CNTL CAB	CABLE TUNNEL	
			Y614	8	19/22		846		LINE 4 METERING CT LEADS	OCB NO. 448 CNTL CAB	MAIN CNTL SWBD PNL 2F	
Y615	1 1/2	68								OCB NO. 448 CNTL CAB	CABLE TUNNEL	
			Y615	8	19/22		846		LINE 4 RELAYS CT LEADS	OCB NO. 448 CNTL CAB	MAIN CNTL SWBD PNL 2R	
Y616	1 1/2	20								CT PHASE B	CABLE TUNNEL	
			Y616	8	19/22				LINE 4 REVENUE METERING CT LEADS	CT PHASE B	RECORDER BD PNL 1R	
Y616	2	20								CT PHASE B	CABLE TUNNEL	
			Y616	5	10		750		LINE 4 METERING CT LEADS	CT PHASE B	MAIN CNTL SWBD PNL 2F	Y616, TRAY AC8, R6
Y616A	1 1/2	23								CT PHASE B	CT PHASE A	
			Y616A	3	19/22				CT LEADS	CT PHASE B	CT PHASE A	
Y616A	2	23								CT PHASE B	CT PHASE A	
			Y616A	3	10		30		CT LEADS	CT PHASE B	CT PHASE A	

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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 11
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE F | SOLICITATION NO. DACW21-03-B-0007 | FILE NO. HAR0157 | PLATE E-84
SCALE: NONE | SHEET 100

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BAY 6
LINE 4

NUMBER	CONDUIT SIZE	LGTH	NUMBER	NO. COND.	CABLE GAUGE	INSUL	RUN LGTH	OP-VOLT	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y616C	1 1/2	23								CT PHASE B	CT PHASE C	
			Y616C	3	19/22				CT LEADS	CT PHASE B	CT PHASE C	
Y616C	2	23								CT PHASE B	CT PHASE C	
			Y616C	3	10		30		CT LEADS	CT PHASE B	CT PHASE C	
Y617	2	42								CCVT PHASE B	CABLE TUNNEL	
			Y617	12	19/25		878		LINE 4 RELAY AND IND PT LEADS	CCVT PHASE B	MAIN CNTL SWBD PNL 2R	
Y617	2	42								CCVT PHASE B	CABLE TUNNEL	
			Y617	9	12		878		LINE 4 RELAY AND IND PT LEADS	CCVT PHASE B	MAIN CNTL SWBD PNL 2F	Y617, TRAY AC8, AC9
Y617A	1 1/2	23								CCVT PHASE B	CCVT PHASE A	
			Y617A	3	19/25		23		PT LEADS	CCVT PHASE B	CCVT PHASE A	
Y617A	2	23								CCVT PHASE B	PT PHASE A	
			Y617A	3	12		30		PT LEADS	CCVT PHASE B	PT PHASE A	
Y617C	1 1/2	23								CCVT PHASE B	CCVT PHASE C	
			Y617C	3	19/25		23		PT LEADS	CCVT PHASE B	CCVT PHASE C	
Y617C	2	23								CCVT PHASE B	PT PHASE C	
			Y617C	3	12		30		PT LEADS	CCVT PHASE B	PT PHASE C	
NONE												
			Y618	3	19/25				LINE 4 RELAY POLORIZING PT LEADS	POT ADJ UNIT SPREAD RM	MAIN CNTL SWBD PNL 2R	
Y620	1 1/2	24								PT PHASE C	CABLE TUNNEL	
			Y620	5	19/25				LINE 4 REVENUE METERING PT LEADS	PT PHASE C	RECORDER BD PNL 1R	
Y620A	1 1/2	36								PT PHASE C	PT PHAS A	
			Y620A	3	19/25				PT LEADS	PT PHASE C	PT PHAS A	
Y621	2	53								MOD NO. 437 CNTL CAB	CABLE TUNNEL	
			Y621	9	19/25		836		LINE 4 MOD CONTROLS	MOD NO. 437 CNTL CAB	MAIN CNTL SWBD PNL 2F	
Y621	2	68								GCB NO. 438 CNTL CAB	GCB NO. 448 CNTL CAB	
			Y621	5	10		100		LINE 4 RELAYS CT LEADS	GCB NO. 438 CNTL CAB	GCB NO. 448 CNTL CAB	Y621, Y613
			Y623	5	10		150		AUX BUS DIFFERENTIAL RELAY CT LEADS	GCB NO. 438 CNTL CAB	AUX BUS DIFF CT BOX Y5	Y621, TRAY AC8
Y622X	1 1/2	68	SPARE						SPARE	OCB NO. 448 CNTL CAB	CABLE TUNNEL	
										OCB NO. 448 CNTL CAB		
Y623	2	53								MOD NO. 437 CNTL CAB	CABLE TUNNEL	
			Y623	7	19/25		85		MOD INTERLOCKS	MOD NO. 437 CNTL CAB	TERM BOX Y3	
			B86	2	19/22				LINE 4 MOD DC POWER SUPPLY	MOD NO. 437 CNTL CAB	125 VDC DIST SWBD	
Y624X	2	20	SPARE						SPARE	CT PHASE A	CABLE TUNNEL	
Y625X	2	20	SPARE						SPARE	CT PHASE B	CABLE TUNNEL	
Y626X	2	20	SPARE						SPARE	CT PHASE C	CABLE TUNNEL	

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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 12
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-85

SCALE: NONE SHEET 101

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BAY 6
LINE 4

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	CABLE NO. COND.	CABLE GAUGE	CABLE INSUL	CABLE RUN LGTH	CABLE OP-VOLT	DESCRIPTION CABLE FUNCTION	DESCRIPTION FROM	DESCRIPTION TO	ROUTING AND REMARKS
Y627X	2	42	SPARE						SPARE	CCVT PHASE B	CABLE TUNNEL	
Y628	1	68								SWYD LOAD CENTER	CABLE TUNNEL	
			Y628	4	10				LINE 4 OCB AC POWER SUPPLY	SWYD LOAD CENTER	OCB NO. 448 CNTL CAB	
Y628	2	68								SWYD LOAD CENTER	CABLE TUNNEL	
			Y628	2	10		200		LINE 4 MAIN BUS GCB AUXILLIARIES AC POWER SUPPLY	SWYD LOAD CENTER	GCB NO. 448 CNTL CAB	CABLE TUNNEL, Y628
			Y628A	2	10		200		LINE 4 MAIN BUS GCB CAPACITIVE TRIP AC POWER SUPPLY	SWYD LOAD CENTER	GCB NO. 448 CNTL CAB	CABLE TUNNEL, Y628
Y629	1	68								CABLE TUNNEL	OCB NO. 448 CNTL CAB	
			B41	2	19/22		846		LINE 4 OCB DC POWER SUPPLY	125 VDC DIST SWBD	OCB NO. 448 CNTL CAB	SEE CABLE B41
Y630X	2	24	SPARE						SPARE	PT PHASE A	CABLE TUNNEL	
Y631X	2	24	SPARE						SPARE	PT PHASE C	CABLE TUNNEL	
Y632	1	53								MOD NO. 437 CNTL CAB	CABLE TUNNEL	
			Y632	2	10		272		LINE 4 MOD AC POWER SUPPLY	MOD NO. 437 CNTL CAB	SWYD LOAD CENTER	CABLE TUNNEL, Y632
Y632	2	53								GCB NO. 438 CNTL CAB	CABLE TUNNEL	
			Y632	2	10		160		LINE 4 AUX BUS GCB AUXILLIARIES AC POWER SUPPLY	GCB NO. 438 CNTL CAB	SWYD LOAD CENTER	CABLE TUNNEL, Y632
			Y632A	2	10		160		LINE 4 AUX BUS GCB CAPACITIVE TRIP AC POWER SUPPLY	GCB NO. 438 CNTL CAB	SWYD LOAD CENTER	CABLE TUNNEL, Y632
NONE										NONE	NONE	
			Y633	2	19/25				LINE 4 THERMAL CONV MILLIVOLT LEADS	MAIN CNTL SWBD PNL 2F	RECORDER BD PNL 6R	
Y642X	2	40							FUTURE COMMUNICATION	CCVT PHASE A	CABLE TUNNEL	
Y643	2	40								CCVT PHASE B	CABLE TUNNEL	
			Y643	1	RG-8/U				CARRIER CURRENT EQUIPMENT	CCVT PHASE B	COMM EQUIP RM	
Y643	2									CCVT PHASE B	CABLE TUNNEL	
			Y643	1	RG-8/U		800		CARRIER CURRENT EQUIPMENT	CCVT PHASE B	MAIN CNTL SWBD PNL 2R	Y643, CABLE TRAY
Y644X	2	40							FUTURE COMMUNICATION	CCVT PHASE C	CABLE TUNNEL	

SYMBOL	ZONE	DESCRIPTION	DATE	BY
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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 13
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-86

SCALE: NONE SHEET 102

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BAY 7
XFMR 3

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y711	2 1/2	16								OCB NO. 328 CNTL CAB	CABLE TUNNEL	
			Y711	12	19/22				TRANSFORMER NO. 3 MAIN BUS OCB CONTROLS	OCB NO. 328 CNTL CAB	MAIN CNTL SWBD PNL 1F	
Y711	2 1/2	68								GCB NO. 328 CNTL CAB	CABLE TUNNEL	
			Y711	12	12		950		TRANSFORMER NO. 3 MAIN BUS GCB CONTROLS	GCB NO. 328 CNTL CAB	MAIN CNTL SWBD PNL 1F	Y711, TRAY DC7, DC5, AC34
			B74	2	10		950		TRANSFORMER NO. 3 MAIN BUS GCB DC POWER	GCB NO. 328 CNTL CAB	125 VDC DIST SWBD	Y711, TRAY DC3, 10, 11
			A73	5	12		950		ANNUNCIATION	GCB NO. 328 CNTL CAB	MAIN CNTL SWBD PNL 1F	Y711, TRAY DC11
Y711A	2 1/2	68							SPARE	GCB NO. 328 CNTL CAB	CABLE TUNNEL	
Y713	2 1/2	68								OCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y713	12	19/25				TRANSFORMER NO. 3 OCB IND & ANN	OCB NO. 318 CNTL CAB	MAIN CNTL SWBD PNL 1F	
Y713	2 1/2	30								GCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y713	12	12		920		TRANSFORMER NO. 3 AUX BUS GCB CONTROLS	GCB NO. 318 CNTL CAB	MAIN CNTL SWBD PNL 1F	Y713, TRAY DC7, DC5, AC34
			B75	2	10		920		TRANSFORMER NO. 3 AUX BUS GCB DC POWER	GCB NO. 318 CNTL CAB	125 VDC DIST SWBD	Y713, TRAY DC3, 10, 11
			A72	5	12		920		ANNUNCIATION	GCB NO. 318 CNTL CAB	MAIN CNTL SWBD PNL 1F	Y713, TRAY DC11
Y713A	2 1/2	30							SPARE	GCB NO. 318 CNTL CAB	CABLE TUNNEL	
Y714	1 1/2	68								OCB NO. 328 CNTL CAB	CABLE TUNNEL	
			Y714	5	19/22				POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	OCB NO. 328 CNTL CAB	MAIN CNTL SWBD PNL 1R	
Y714	2	68								GCB NO. 328 CNTL CAB	CABLE TUNNEL	
			Y714	5	10		950		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB NO. 328 CNTL CAB	MAIN CNTL SWBD PNL 1R	Y714, TRAY AC8, AC7, AC5
			Y715	5	10		950		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB NO. 318 CNTL CAB	GCB NO. 328 CNTL CAB	Y714, Y717
			Y716	5	10		950		MAIN BUS DIFFERENTIAL RELAY CT LEADS	GCB NO. 328 CNTL CAB	MAIN BUS DIFF CT BOX Y4	
Y715	1 1/2	30								OCB NO. 318 CNTL CAB	OCB NO. 328 CNTL CAB	
			Y715	5	19/22				POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	OCB NO. 318 CNTL CAB	OCB NO. 328 CNTL CAB	
Y716	2	68								OCB NO. 328 CNTL CAB	CABLE TUNNEL	
			Y716	7	19/22				BUS DIFFERENTIAL RELAY CT LEADS	OCB NO. 328 CNTL CAB	BUS DIFF CT BOX Y4	
Y717	1 1/2	30								OCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y717	5	19/22				TRANSFORMER NO. 3 METERING CT LEADS	OCB NO. 318 CNTL CAB	MAIN CNTL SWBD PNL 1F	
Y717	2	30								GCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y717	5	10		920		TRANSFORMER NO. 3 METERING CT LEADS	GCB NO. 318 CNTL CAB	MAIN CNTL SWBD PNL 1F	Y717, TRAY AC8, AC7, AC5
			Y715	5	10		920		POWERHOUSE LINE DIFFERENTIAL RELAY CT LEADS	GCB NO. 318 CNTL CAB	GCB NO. 328 CNTL CAB	Y717, TRAY AC8
			Y718	5	10		920		AUX BUS DIFFERENTIAL RELAY CT LEADS	GCB NO. 318 CNTL CAB	AUX BUS DIFF CT BOX Y5	Y717, Y714

SYMBOL	ZONE	DESCRIPTION	DATE	BY
		REVISIONS		

HYDROELECTRIC DESIGN CENTER
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SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 14
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-87

SCALE: NONE SHEET 103

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BAY 7
XFMR 3

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
Y718	1 1/2	30							SPARE	OCB NO. 318 CNTL CAB	CABLE TUNNEL	
Y719	2	30								OCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y719	9	19/25				TRANSFORMER NO. 3 METERING PT LEADS	OCB NO. 318 CNTL CAB	MAIN CNTL SWBD PNL 1F	
Y720	1	68								OCB NO. 328 CNTL CAB	CABLE TUNNEL	
			Y720	4	10				TRANSFORMER NO. 3 MAIN BUS OCB AC POWER	OCB NO. 328 CNTL CAB	SWYD LOAD CENTER	
Y720	2	68								GCB NO. 328 CNTL CAB	CABLE TUNNEL	
			Y720	2	10		255		TRANSFORMER NO. 3 MAIN BUS GCB AUXILLIARIES AC POWER	GCB NO. 328 CNTL CAB	SWYD LOAD CENTER	Y720, TRAY AC8
			Y720A	2	10		255		TRANSFORMER NO. 3 MAIN BUS GCB CAPACITIVE TRIP AC POWER	GCB NO. 328 CNTL CAB	SWYD LOAD CENTER	Y720, TRAY AC8
Y721	1	68								OCB NO. 328 CNTL CAB	CABLE TUNNEL	
			B74	2	19/22				TRANSFORMER NO. 3 MAIN BUS OCB DC POWER	OCB NO. 328 CNTL CAB	125 VDC DIST SWBD	SEE CABLE B74
Y722	1	30								OCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y722	4	10				TRANSFORMER NO. 3 AUX BUS OCB AC POWER	OCB NO. 318 CNTL CAB	SWYD LOAD CENTER	
Y722	2	30								GCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y722	2	10		205		TRANSFORMER NO. 3 AUX BUS GCB AUXILLIARIES AC POWER	GCB NO. 318 CNTL CAB	SWYD LOAD CENTER	Y722, TRAY AC8
			Y722A	2	10		205		TRANSFORMER NO. 3 AUX BUS GCB CAPACITIVE TRIP AC POWER	GCB NO. 318 CNTL CAB	SWYD LOAD CENTER	Y722, TRAY AC8
Y723	1	30								OCB NO. 318 CNTL CAB	CABLE TUNNEL	
			B75	2	19/22				TRANSFORMER NO. 3 AUX BUS OCB DC POWER	OCB NO. 318 CNTL CAB	125 VDC DIST SWBD	SEE CABLE B75
Y724	2	30								OCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y724	13	19/25				TRANSFORMER NO. 3 AUX BUS OCB CONTROLS	OCB NO. 318 CNTL CAB	MAIN CNTL SWBD	
Y725X	2	68	SPARE						SPARE	OCB NO. 328 CNTL CAB	CABLE TUNNEL	
Y726X	2	30								OCB NO. 318 CNTL CAB	CABLE TUNNEL	
			Y726X	7	19/25				MOD INTERLOCKS	OCB NO. 318 CNTL CAB	TERM BOX Y3	

SYMBOL	ZONE	DESCRIPTION	DATE	BY
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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 15
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-88

SCALE: NONE SHEET 104

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MISCELLANEOUS CABLES

CONDUIT			CABLE						DESCRIPTION			ROUTING AND REMARKS
NUMBER	SIZE	LGTH	NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	CABLE FUNCTION	FROM	TO	
			A41	12	19/25		38		ANNUNCIATION LIGHTS TRANS. NO. 1	ANN RELAY CAB	MAIN CNTL SWBD PNL 6F	
			A42	12	19/25		38		ANNUNCIATION LIGHTS TRANS. NO. 1	ANN RELAY CAB	MAIN CNTL SWBD PNL 6F	
			A43	12	19/25		36		ANNUNCIATION LIGHTS LINE NO. 2	ANN RELAY CAB	MAIN CNTL SWBD PNL 5F	
			A44	12	19/25		34		ANNUNCIATION LIGHTS TRANS. NO. 2	ANN RELAY CAB	MAIN CNTL SWBD PNL 4F	
			A45	12	19/25		34		ANNUNCIATION LIGHTS TRANS. NO. 2	ANN RELAY CAB	MAIN CNTL SWBD PNL 4F	
			A46	12	19/25		32		ANNUNCIATION LIGHTS LINE NO. 3	ANN RELAY CAB	MAIN CNTL SWBD PNL 3F	
			A50	5	19/25		32		ANN. TROUBLE POINTS LINE NO. 3	ANN RELAY CAB	MAIN CNTL SWBD PNL 3F	
			A51	5	19/25		36		ANN. TROUBLE POINTS LINE NO. 2	ANN RELAY CAB	MAIN CNTL SWBD PNL 5F	
			A52	12	19/25		38		ANN. TROUBLE POINTS TRANS. NO. 2	ANN RELAY CAB	MAIN CNTL SWBD PNL 4R	
			A53	12	19/25		38		ANN. TROUBLE POINTS TRANS. NO. 1	ANN RELAY CAB	MAIN CNTL SWBD PNL 6R	
			A71	12	19/25		30		ANNUNCIATION LIGHTS LINE NO. 4	ANN RELAY CAB	MAIN CNTL SWBD PNL 2F	
			A72	5	19/25		30		ANN. TROUBLE POINTS LINE NO. 4	ANN RELAY CAB	MAIN CNTL SWBD PNL 2F	
			B21	2	19/22		60		TRANS. NO. 1 DIFF. RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 6R	TBDP, TBDN
			B21	2	10		60		TRANS. NO. 1 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 6R	T1RP, T1RN
			B22	2	19/22		60		TRANS. NO. 1 THRM. & MISC. RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 6R	TMRP, TMRN
			B22	2	10		60		TRANS. NO. 1 ANNUNCIATION	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 6F	T1AP, T1AN
			B30	2	19/22		55		TRANS. NO. 2 DIFF. RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 4R	TBDP, TBDN
			B30	2	10		55		TRANS. NO. 2 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 4R	T2RP, T2RN
			B31	2	19/22		55		TRANS. NO. 2 THRM. & MISC. RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 4R	TMRP, TMRN
			B31	2	10		55		TRANS. NO. 2 ANNUNCIATION	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 4F	T2AP, T2AN
			B38	2	19/22		55		LINE NO. 2 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 5R	L2RP, L2RN
			B38	2	10		55		LINE NO. 2 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 5R	L2RP, L2RN
			B40	2	19/22		50		LINE NO. 3 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 3R	L3RP, L3RN
			B40	2	10		50		LINE NO. 3 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 3R	L3RP, L3RN
			B42	2	19/22		50		LINE NO. 4 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 2R	L4RP, L4RN
			B42	2	10		50		LINE NO. 4 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 2R	L4RP, L4RN

SYMBOL	ZONE	DESCRIPTION	DATE	BY
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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 16
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE F | SOLICITATION NO. DACW21-03-B-0007 | FILE NO. HAR0157 | PLATE E-89

SCALE: NONE | SHEET 105

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MISCELLANEOUS CABLES

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
			B44	2	19/22		75		BUS DIFFERENTIAL RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 10R	BDP, BDN
			B44	2	10		50		BUS DIFFERENTIAL RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 3R	BDP, BDN
			B72	2	19/22		43		TRANS. NO. 3 DIFF. RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 1R	3TRP, 3TRN
			B72	2	10		43		TRANS. NO. 3 RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 1R	T3RP, T3RN
			B73	2	19/22		43		TRANS. NO. 3 THRM. & MISC. RELAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 1R	3TXP, 3TXN
			B73	2	10		43		TRANS. NO. 3 ANNUNCIATION	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 1F	T3AP, T3AN
			B77	2	19/22		60		TRANS. NO. 1 CENTRALIZED CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 6F	TCP, TCN
			B77	2	10		55		LINE NO. 2 ANNUNCIATION	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 5F	L2AP, L2AN
			B78	2	19/22		55		TRANS. NO. 2 CENTRALIZED CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 4F	TCP, TCN
			B78	2	10		50		LINE NO. 3 ANNUNCIATION	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 3F	L3AP, L3AN
			B79	2	10		50		LINE NO. 4 ANNUNCIATION	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 2F	L4AP, L4AN
			B104	4	19/22		43		TRANS. NO. 3 ANN. & WATER SPRAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 1F	3ATP, 3ATN, 3WSP, 3WSN
			B104	2	10		43		TRANS. NO. 3 WATER SPRAY CONT.	125 VDC DIST SWBD	MAIN CNTL SWBD PNL 1F	T3WSP, T3WSN
			J3	7	19/25		60		DC SUPPLY & CARRIER START - STOP	CARRIER CAB LINE 2	MAIN CNTL SWBD PNL 5R	
			J4	9	19/25		65		CARRIER TEL. & TEST	CARRIER CAB LINE 2	MAIN CNTL SWBD PNL 5R	
			J5	7	19/25		60		DC SUPPLY & CARRIER START - STOP	CARRIER CAB LINE 3	MAIN CNTL SWBD PNL 3R	
			J6	9	19/25		65		CARRIER TEL. & TEST	CARRIER CAB LINE 3	MAIN CNTL SWBD PNL 3R	
			J7	7	19/25				DC SUPPLY & CARRIER START - STOP	CARRIER CAB LINE 4	MAIN CNTL SWBD PNL 2R	
			J8	9	19/25				CARRIER TEL. & TEST	CARRIER CAB LINE 4	MAIN CNTL SWBD PNL 2R	
			12G1	12	14		200		TRANS. NO. 1 RELAY CONT.	TRANS 1 MCC CUB 2	MAIN CNTL SWBD PNL 6R	DISCONNECT AND RECONNECT WIRING. RELABEL IF NECESSARY.
			12G2	12	14		200		TRANS. NO. 1 WATER SPRAY CONT.	TRANS 1 MCC CUB 2	MAIN CNTL SWBD PNL 6F	DISCONNECT AND RECONNECT WIRING. RELABEL IF NECESSARY.
			12G8	16	14		150		TRANS. NO. 1 ANNUNCIATION	TERM BOX 30	ANNUN RELAY CAB	DISCONNECT WIRING.
											MAIN CNTL SWBD PNL 6F	RECONNECT WIRING. RELABEL IF NECESSARY.
			12G10	16	14		135		TRANS. NO. 1 RELAY CONT.	TERM BOX 30	MAIN CNTL SWBD PNL 6R	DISCONNECT AND RECONNECT WIRING. RELABEL IF NECESSARY.
			12G21	12	10		130		TRANS. NO. 1 DIFF. RELAYS	TERM BOX 48	MAIN CNTL SWBD PNL 6R	DISCONNECT AND RECONNECT WIRING. RELABEL IF NECESSARY.
			12G30	4	19/22		155		TRANS. NO. 1 DIFF. RELAY	GEN 1 CB CUB	MAIN CNTL SWBD PNL 6R	
			12G30	5	10		155		TRANS. NO. 1 DIFF. RELAY	GEN 1 CB CUB	MAIN CNTL SWBD PNL 6R	

SYMBOL	ZONE	DESCRIPTION	DATE	BY

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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 17
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-90

SCALE: NONE SHEET 106

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MISCELLANEOUS CABLES

CONDUIT			CABLE						DESCRIPTION			
NUMBER	SIZE	LGTH	NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
			12G31	4	19/22		210		TRANS. NO. 1 DIFF. RELAY	GEN 2 CB CUB	MAIN CNTL SWBD PNL 6R	
			12G31	5	10		210		TRANS. NO. 1 DIFF. RELAY	GEN 2 CB CUB	MAIN CNTL SWBD PNL 6R	
			12G32	4	19/22		195		TRANS. NO. 1 DIFF. RELAY	13.8 KV SS SWGR 1 & 2	MAIN CNTL SWBD PNL 6R	
			12G32	5	10		195		TRANS. NO. 1 DIFF. RELAY	13.8 KV SS SWGR 1 & 2	MAIN CNTL SWBD PNL 6R	
			34G1	12	14		345		TRANS. NO. 2 RELAY CONT.	TRANS 2 MCC CUB 2	MAIN CNTL SWBD PNL 4R	DISCONNECT AND RECONNECT WIRING. RELABEL IF NECESSARY.
			34G2	12	14		345		TRANS. NO. 2 WATER SPRAY CONT.	TRANS 2 MCC CUB 2	MAIN CNTL SWBD PNL 4F	DISCONNECT AND RECONNECT WIRING. RELABEL IF NECESSARY.
			34G8	16	14		285		TRANS. NO. 2 ANNUNCIATION	TERM BOX 33	ANNUN RELAY CAB	DISCONNECT WIRING.
											MAIN CNTL SWBD PNL 4F	RECONNECT WIRING. RELABEL IF NECESSARY.
			34G10	16	14		280		TRANS. NO. 2 RELAY CONT.	TERM BOX 33	MAIN CNTL SWBD PNL 4R	DISCONNECT AND RECONNECT WIRING. RELABEL IF NECESSARY.
			34G21	12	10		265		TRANS. NO. 2 DIFF. RELAYS	TERM BOX 49	MAIN CNTL SWBD PNL 4R	DISCONNECT AND RECONNECT WIRING. RELABEL IF NECESSARY.
			34G30	4	19/22		305		TRANS. NO. 2 DIFF. RELAY	GEN 3 CB CUB	MAIN CNTL SWBD PNL 4R	
			34G30	5	10		305		TRANS. NO. 2 DIFF. RELAY	GEN 3 CB CUB	MAIN CNTL SWBD PNL 4R	
			34G31	4	19/22		345		TRANS. NO. 2 DIFF. RELAY	GEN 4 CB CUB	MAIN CNTL SWBD PNL 4R	
			34G31	5	10		345		TRANS. NO. 2 DIFF. RELAY	GEN 4 CB CUB	MAIN CNTL SWBD PNL 4R	
			34G32	4	19/22		330		TRANS. NO. 2 DIFF. RELAY	13.8 KV SS SWGR 3 & 4	MAIN CNTL SWBD PNL 4R	
			34G32	5	10		330		TRANS. NO. 2 DIFF. RELAY	13.8 KV SS SWGR 3 & 4	MAIN CNTL SWBD PNL 4R	
			5G80	13	19/25		416		TRANS. NO. 3 RELAY CONT. & ANN.	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1R	
			5G80	12	12		416		TRANS. NO. 3 RELAY CONT.	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1R	
			5G81	9	19/25		415		TRANS. NO. 3 WATER SPRAY CONT.	PULL BOX EL 498.5	MAIN CNTL SWBD PNL 1F	
			5G81	9	12		415		TRANS. NO. 3 WATER SPRAY CONT.	PULL BOX EL 498.5	MAIN CNTL SWBD PNL 1F	
			5G82	9	12		416		TRANS. NO. 3 ANNUNCIATION	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1F	
			5G84	13	19/25		416		TRANS. NO. 3 OIL FLOW INTLK. & RELAY CONT.	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1R	
			5G84	5	12		416		TRANS. NO. 3 OIL FLOW INTLK.	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1R	
			5G93	2	19/22		415		TRANS. NO. 3 GROUND RELAY	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1R	
			5G94	4	19/22		415		TRANS. NO. 3 LINE DIFF. RELAY	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1R	

SYMBOL	ZONE	DESCRIPTION	DATE	BY
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HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 18
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	SOLICITATION NO.	FILE NO.	PLATE
F	DACW21-03-B-0007	HAR0157	E-91

SCALE: NONE SHEET 107

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MISCELLANEOUS CABLES

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LGTH	CABLE NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	DESCRIPTION CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
			5G95	4	19/22		415		TRANS. NO. 3 DIFF. RELAY	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1R	
			5G95	12	10		415		TRANS. NO. 3 DIFF. RELAYS	TRANS 3 TERM CAB	MAIN CNTL SWBD PNL 1R	
			5G96	4	19/22		429		TRANS. NO. 3 DIFF. RELAY	GEN 5 CB CUB	MAIN CNTL SWBD PNL 1R	
			5G96	5	10		429		TRANS. NO. 3 DIFF. RELAY	GEN 5 CB CUB	MAIN CNTL SWBD PNL 1R	
Y811	2	64								MOD NO. 101 CNTL CAB	CABLE TUNNEL	
			Y811	9	19/25		735		AUX BUS MOD NO. 101 CONTROLS	MOD NO. 101 CNTL CAB	MAIN CNTL SWBD PNL 4F	
Y811	2	68								AUX BUS PT	CABLE TUNNEL	
			Y811	9	12		500		AUX BUS PT LEADS	AUX BUS PT	MAIN CNTL SWBD	Y811, TRAY AC8, AC9
Y812	2 1/2	68								MOD NO. 101 CNTL CAB	CABLE TUNNEL	
			Y812	12	19/25		142		AUX BUS MOD NO. 101 CNTL INTERLOCKS	MOD NO. 101 CNTL CAB	TERM BOX Y2	
			B43	2	19/22		700		AUX BUS MOD NO. 101 DC POWER SUPPLY	MOD NO. 101 CNTL CAB	125 VDC DIST SWBD	
Y813	1	68								CABLE TUNNEL	MOD NO. 101 CNTL CAB	
			Y813	2	10		162		AUX BUS NOD NO. 101 AC POWER SUPPLY	SWYD LOAD CENTER	MOD NO. 101 CNTL CAB	Y813, TRAY AC7
Y814X									UNUSED			
Y815	1 1/2	135								MAIN BUS CCVT	CABLE TUNNEL	
			Y815	5	19/25		800		MAIN BUS VOLTAGE IND RECORD AND RELAY	MAIN BUS CCVT	POT ADJ UNIT SPREAD RM	Y815, TRAY AC8, AC9
Y815	2	135								MAIN BUS PT	CABLE TUNNEL	
			Y815	9	12		500		MAIN BUS PT LEADS	MAIN BUS PT	MAIN CNTL SWBD	Y815, TRAY AC8, AC9
NONE			Y816	2	19/25		60		MAIN BUS VOLTAGE RECORD	POT ADJ UNIT SPREAD RM	RECORDER BD	
NONE			Y817	2	19/25		45		MAIN BUS VOLTAGE SYNC AND RELAY	RECORDER BD	MAIN CNTL SWBD PNL 3R	
NONE			Y818	7	19/25		165		MOD INTERLOCKS	TERM BOX Y1	TERM BOX Y2	TRAY DC11
NONE			Y819	7	NO. 12				MOD INTERLOCKS	TERM BOX Y2	TERM BOX Y3	TRAY DC11
NONE			Y820	7	19/22		715		BUS DIFFERENTIAL RELAY CT LEADS	BUS DIFF CT BOX Y4	MAIN CNTL SWBD PNL 10R	
NONE			Y820	5	10		715		MAIN BUS DIFFERENTIAL RELAY CT LEADS	MAIN BUS DIFF CT BOX Y4	MAIN CNTL SWBD PNL 3R	
NONE			Y821	5	10		715		AUX BUS DIFFERENTIAL RELAY CT LEADS	AUX BUS DIFF CT BOX Y5	MAIN CNTL SWBD PNL 2R	

SYMBOL	ZONE	DESCRIPTION	DATE	BY
		REVISIONS		

HYDROELECTRIC DESIGN CENTER
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SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD UPGRADE
CONDUIT AND CABLE SCHEDULE
SHEET 19
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE F | SOLICITATION NO. DACW21-03-B-0007 | FILE NO. HAR0157 | PLATE E-92

SCALE: NONE | SHEET 108

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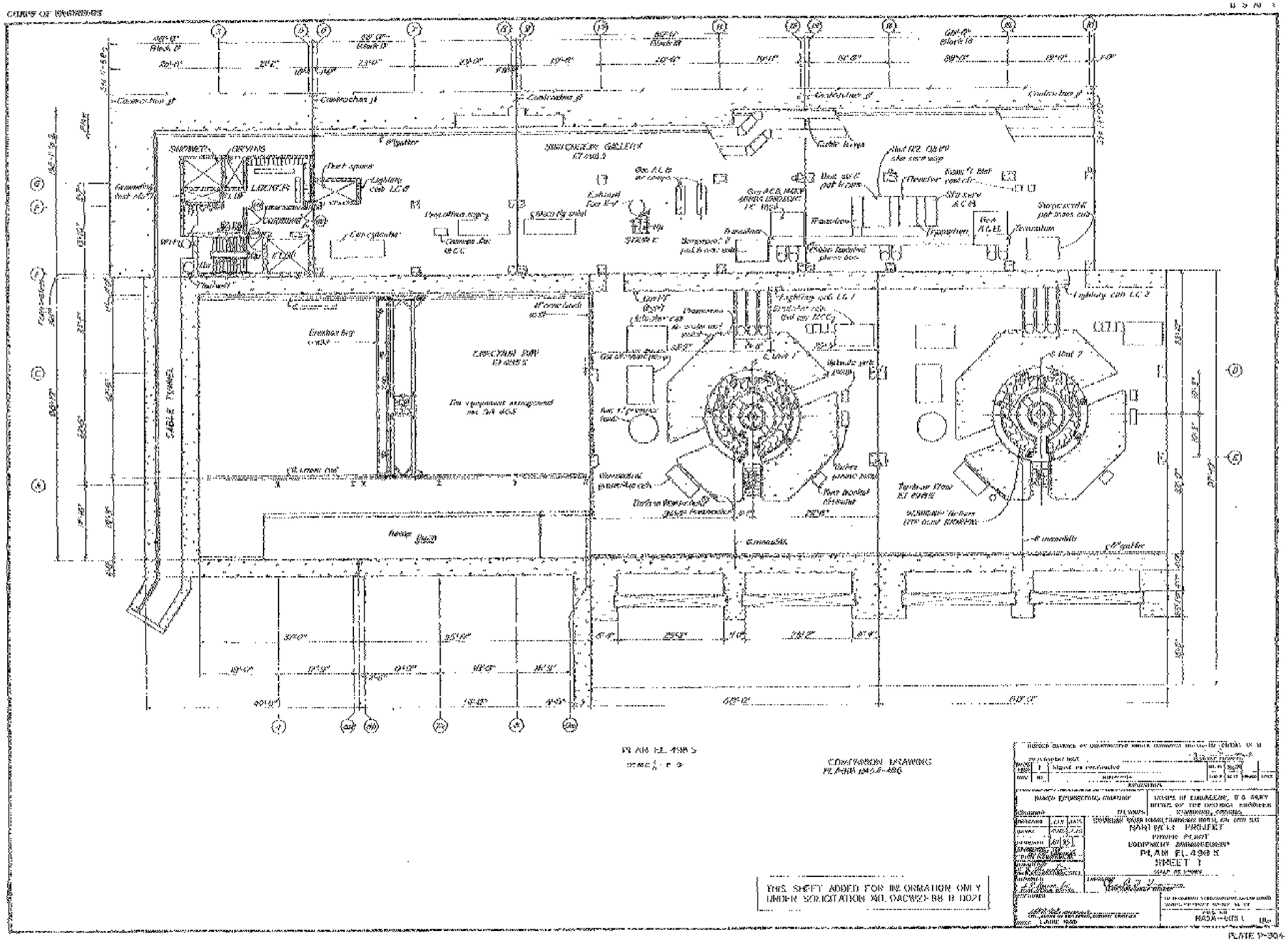

INFORMATION ONLY

SHEET 109

HYDROELECTRIC DESIGN CENTER
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U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
PLAN EL. 498.5
SHEET 1

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-1

SCALE: SHEET 00

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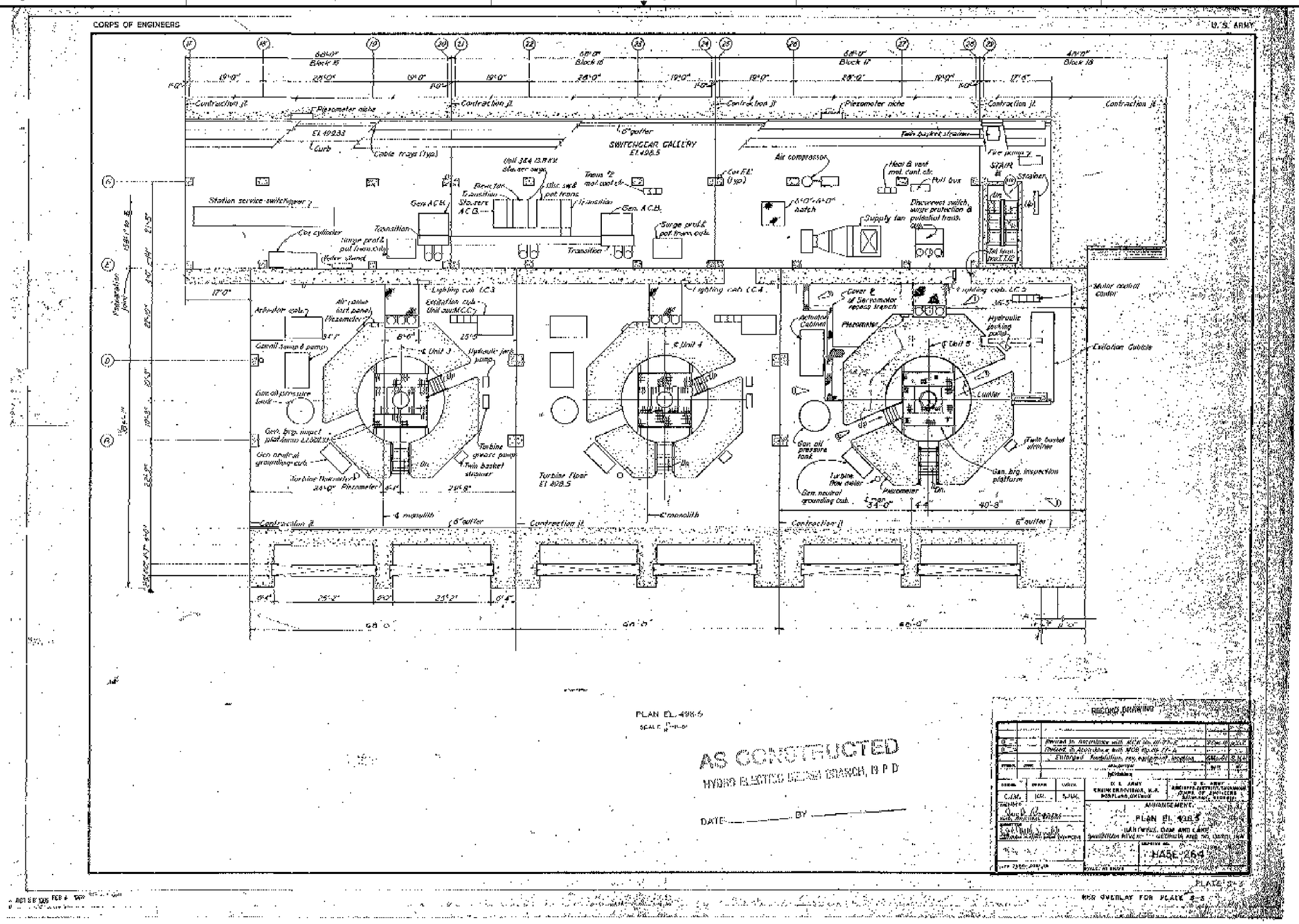

INFORMATION ONLY

SHEET 110

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD

PLAN EL. 498.5

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-2

SCALE: SHEET 00

13 Nov 2002
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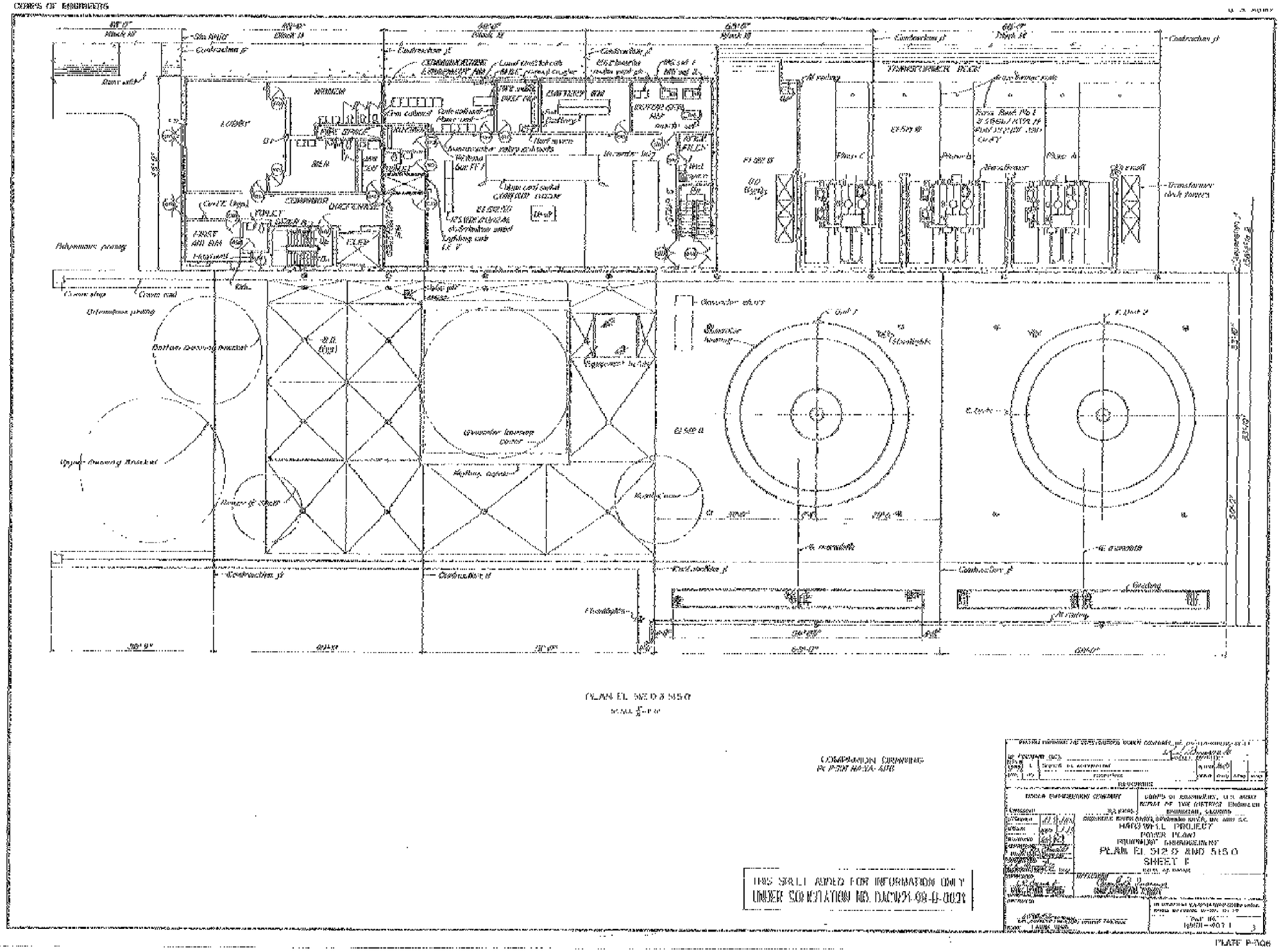

INFORMATION ONLY

SHEET 111

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
PLAN EL. 512.0 AND 515.0
SHEET 1
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-3

SCALE: SHEET 00

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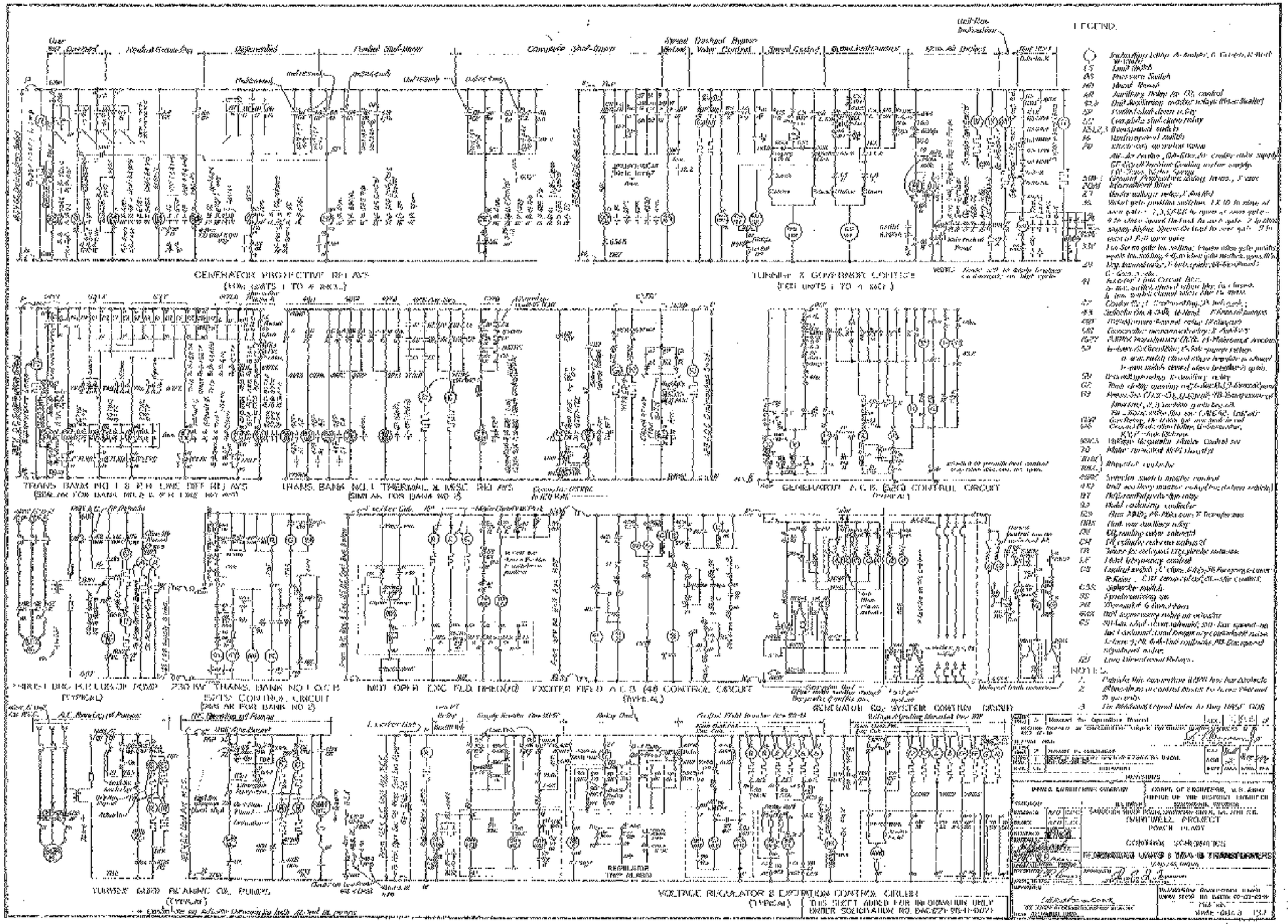

INFORMATION ONLY

SHEET 112

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
CONTROL SCHEMATICS
GEN. UNITS 1-4 & TRANSF.
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-4

SCALE: SHEET 00

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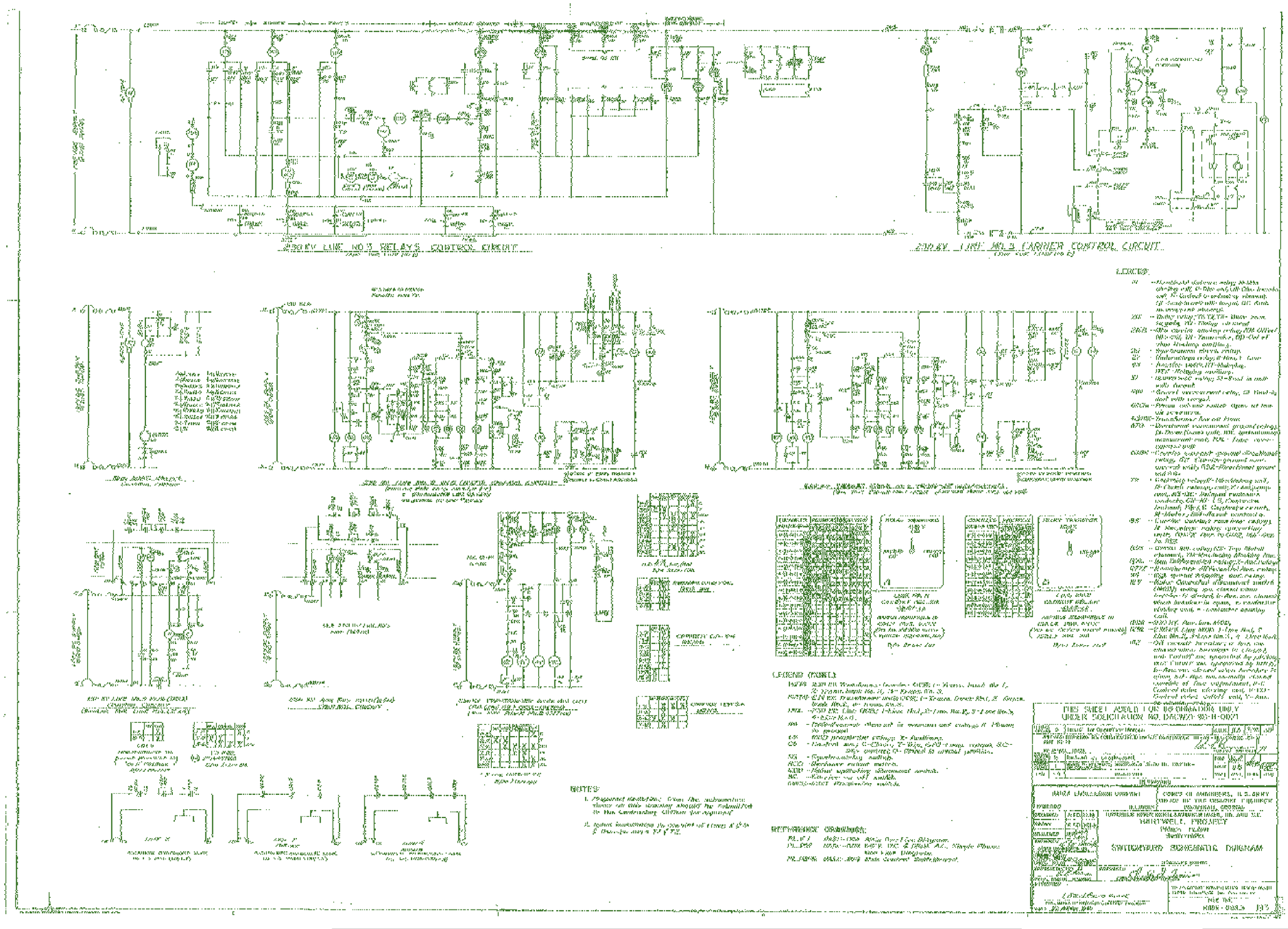

INFORMATION ONLY

SHEET 113

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD

SWITCHYARD SCHEMATIC DIAGRAM

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-5

SCALE: SHEET 00

13 Nov 2002
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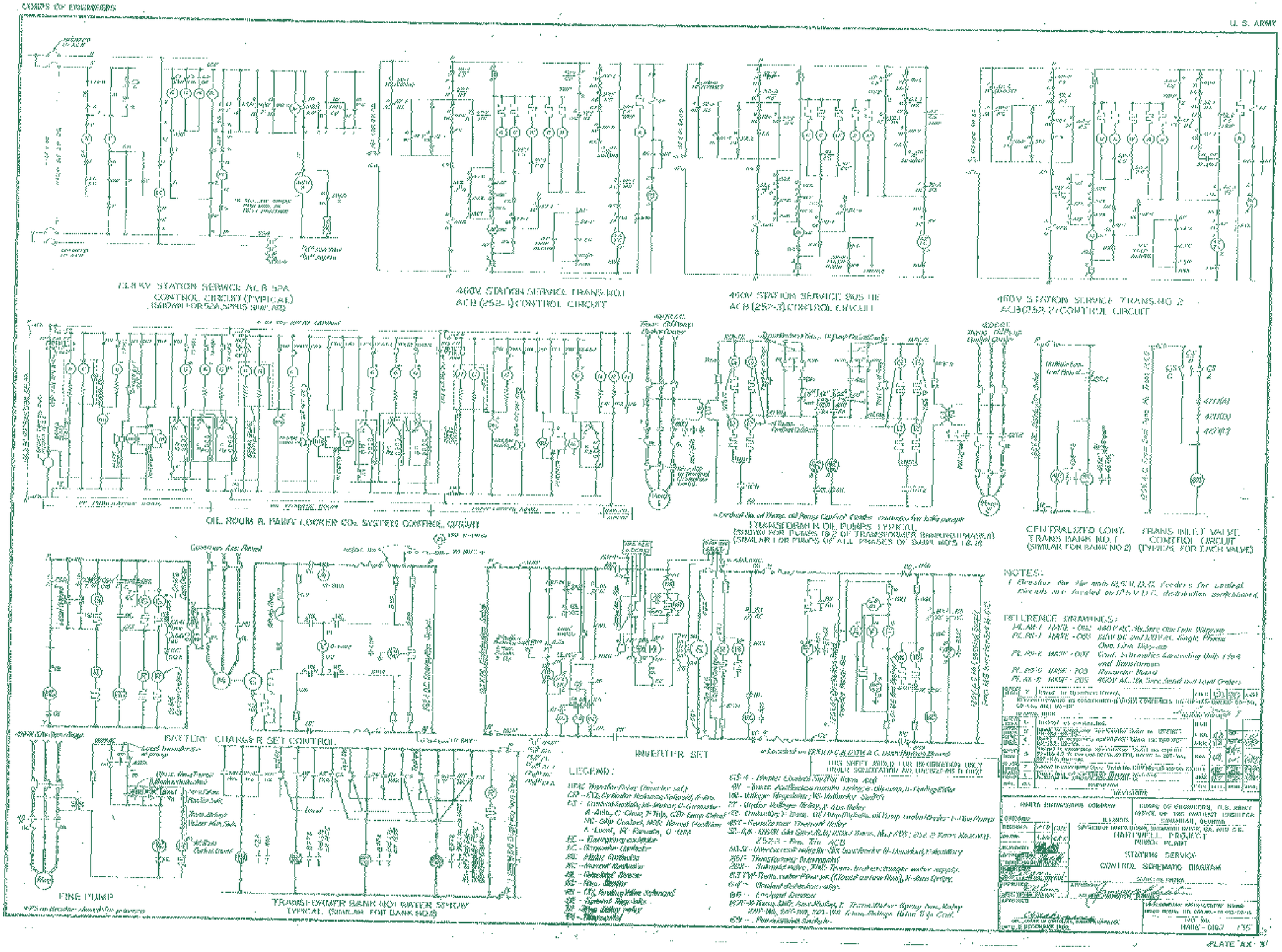

INFORMATION ONLY

SHEET 114

HYDROELECTRIC DESIGN CENTER PORTLAND, OR	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
STATION SERVICE
CONTROL SCHEMATIC DIAGRAM
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
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SCALE:		SHEET 00	

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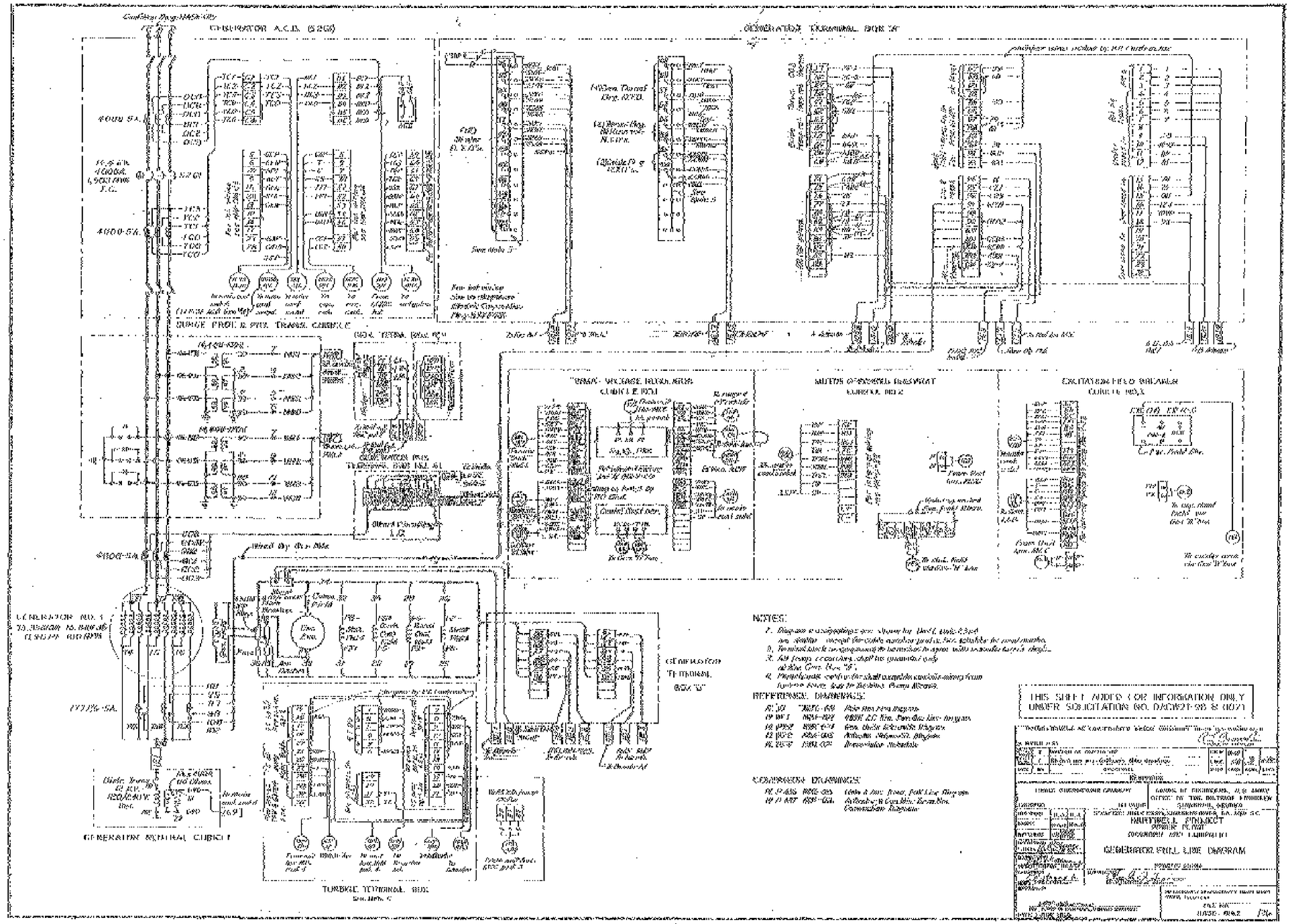

INFORMATION ONLY

SHEET 115

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD

GENERATOR FULL LINE DIAGRAM

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-7

SCALE: SHEET 00

13 Nov 2002
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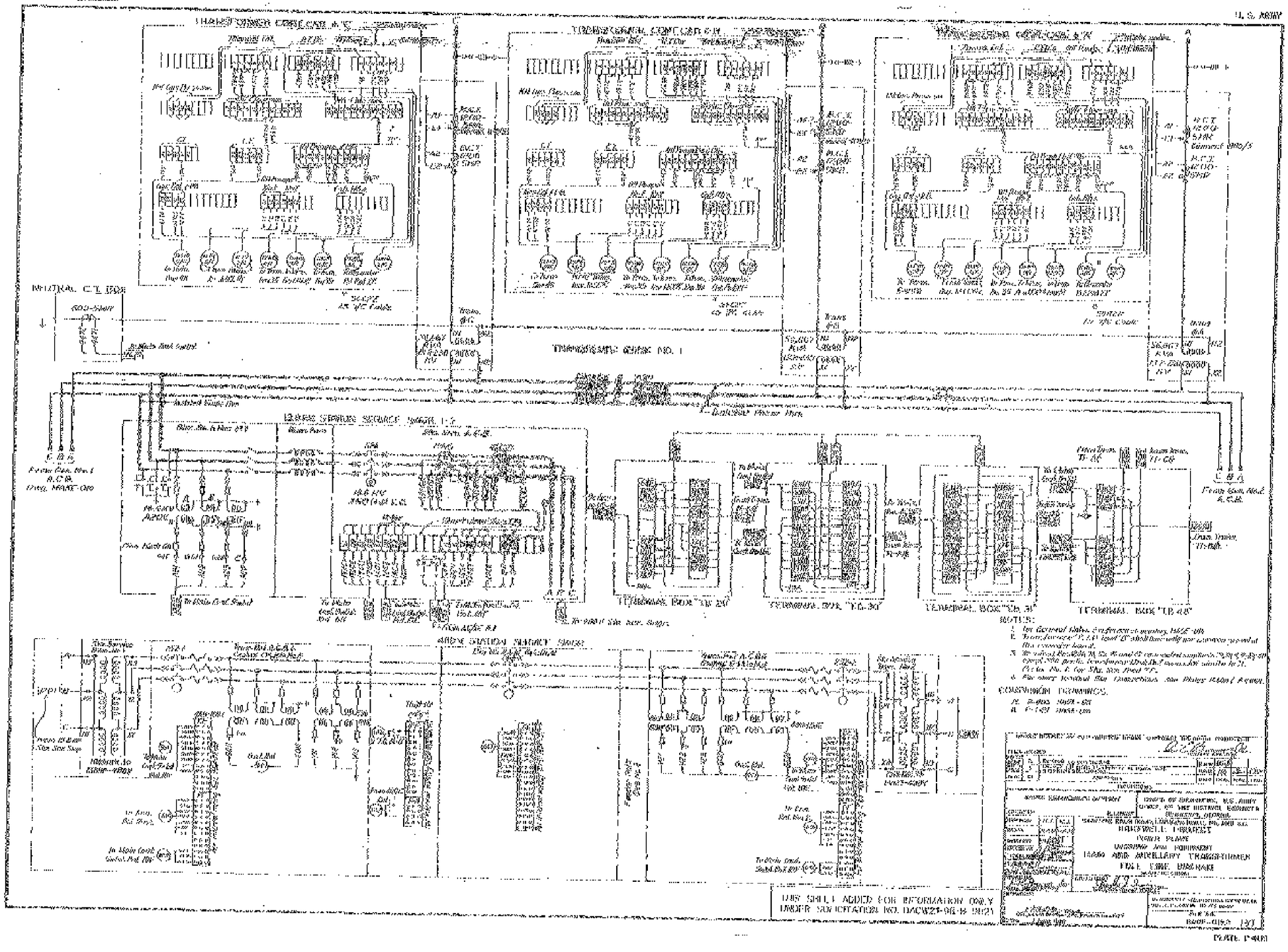

INFORMATION ONLY

SHEET 116

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
MAIN AND AUXILIARY TRANSFORMER
FULL LINE DIAGRAM
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-8

SCALE: SHEET 00

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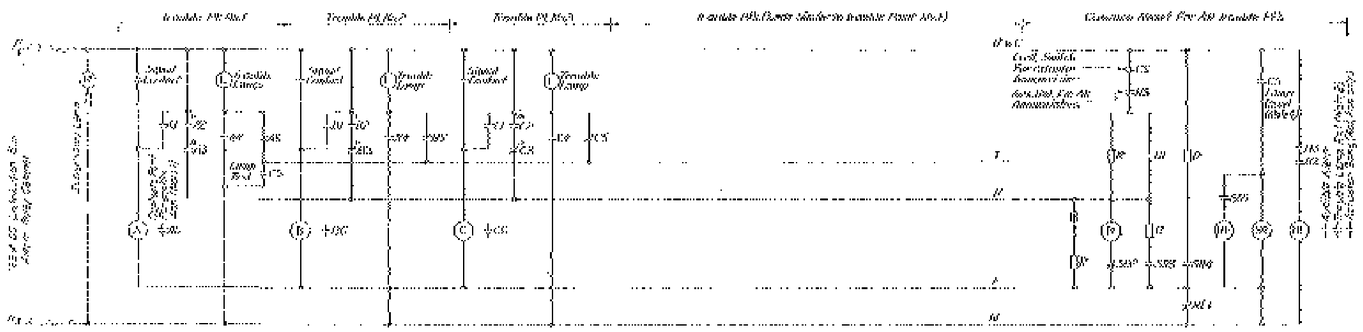
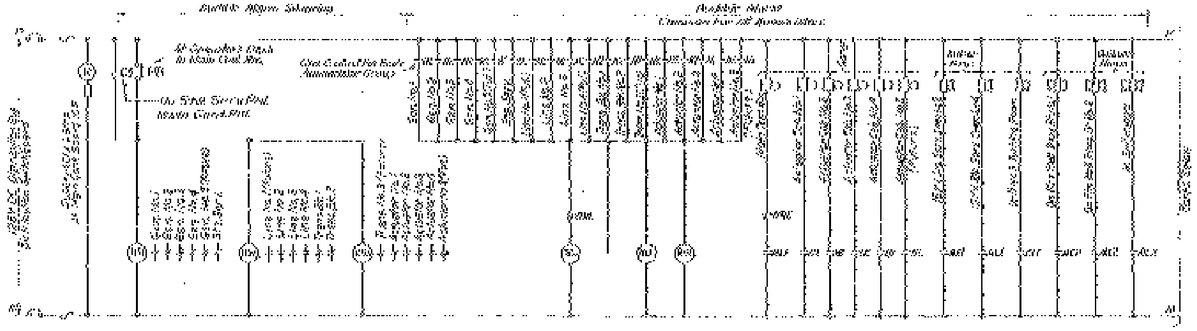
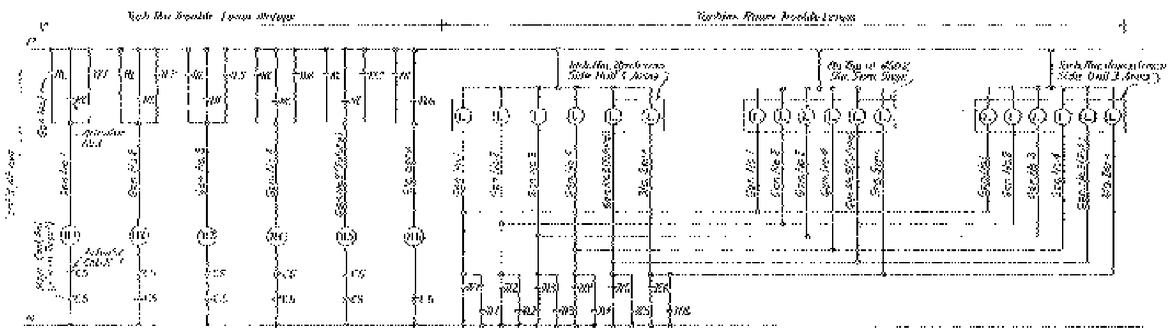


TROUBLE POINT SCHEMATIC
(TYPICAL)



ANNUNCIATOR SCHEMATIC



TROUBLE LAMP SCHEMATIC

LEGEND:

A, B, C Trouble Point Relays
HL — Horn Relay
Co — Control Switch
H — Horn Relay
VR — Audible Alarm Relay
RS Horn Silencing Relay
GFC Grid Fan Cooling Oscillating Relay (Normal Type)
FS Fault Indicator
R — Resistor
$\frac{67}{50N}$ Alarm Reset Relays
TL Trouble Alarm Trouble Lamp Relays
(L) Alarm Point Trouble Lamps
(R) Alarm Point Supervisory Lamps Red
n Make Before Break Continuity Monitor Contact

NOTES:

1. If the space heater panel is equipped for the Annunciators on the Main Control Board and the Annunciator Panel Alarm on Auxiliary Control Board to be under the control of the Annunciators, as shown on Drawing HA5E-016.
2. Connect 24 Relay Contact Will be used for the Alarm Indicating Lamp Relays.
3. All Relays are shown in de-energized condition and Alarm contacts are normally open.
4. Control Switch on the Main Control Board shall have Contact position for Alarm reset.

REFERENCE DRAWINGS:

H1 GA-8 HA5E-204 Alarm Control Switchboard
H1 GA-1 HA5E-205 Single Mat Annunciator Cabinet

COMPANION DRAWINGS:

H1 PS-4 HA5E-019 Annunciator Schematic

THIS SHEET MODIFIED FOR INFORMATION ONLY
UNDER MODIFICATION NO. DACW21-98-R-0071

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NO.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

DESIGN CONSULTING ENGINEER
CORPS OF ENGINEERS, U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
SAVANNAH, GEORGIA

SAVANNAH RIVER BASIN, SAVANNAH RIVER, GA AND S.C.
HARTWELL PROJECT
POWER PLANT

ANNUNCIATOR SCHEMATIC DIAGRAM

PLATE R-9

INFORMATION ONLY

SHEET 117

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
ANNUNCIATOR SCHEMATIC DIAGRAM

SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-9

SCALE: SHEET 00

13 Nov 2002
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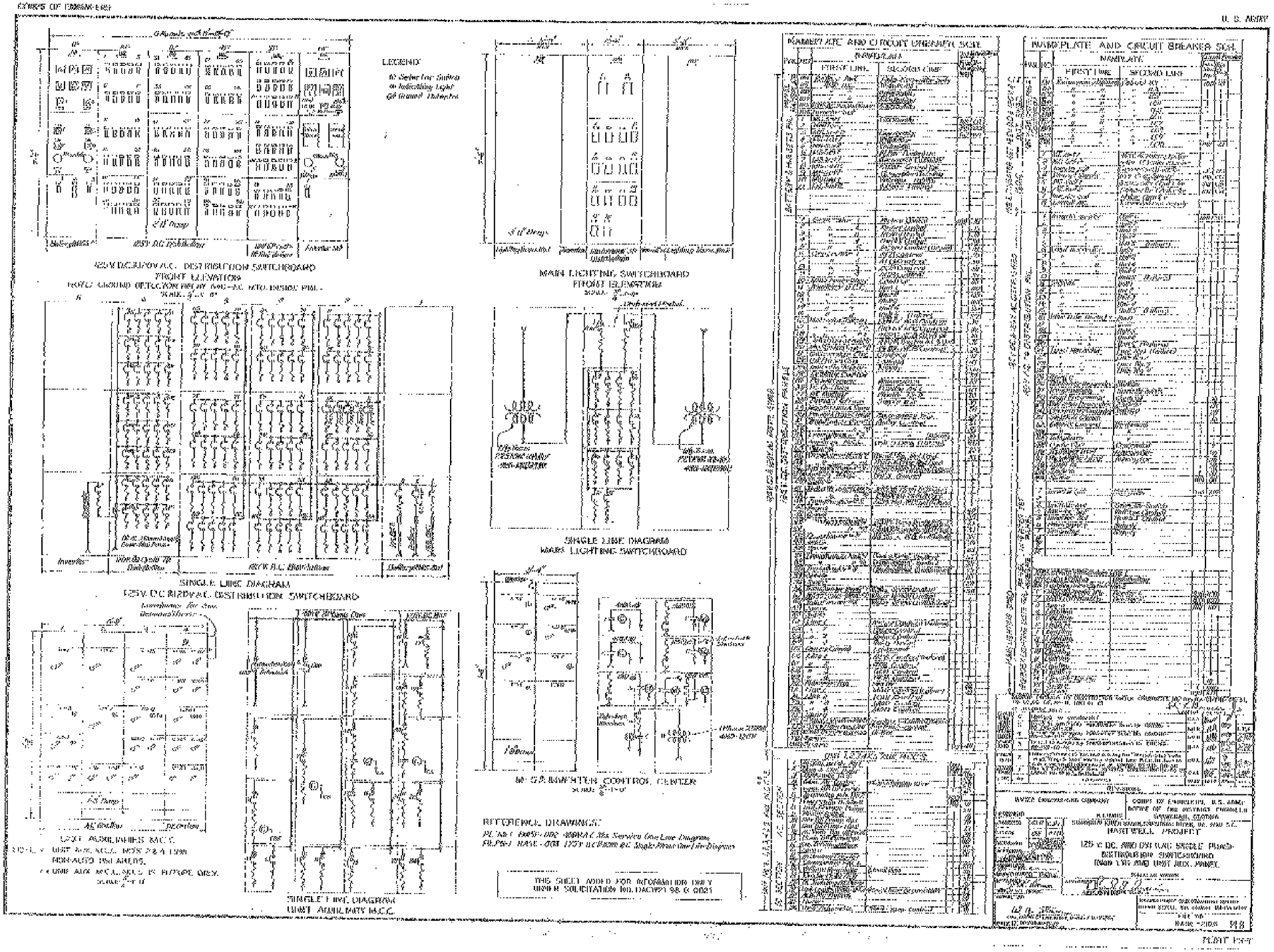

INFORMATION ONLY

SHEET 118

HYDROELECTRIC DESIGN CENTER PORTLAND, OR	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
125 V. DC. & 120 V. AC. 1Ø DIST.
SWBD. MAIN LTG. AND AUX. PANEL
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
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SCALE:		SHEET 00	

REF HA5E-210_6.TIF HA5E-210_6.DGN

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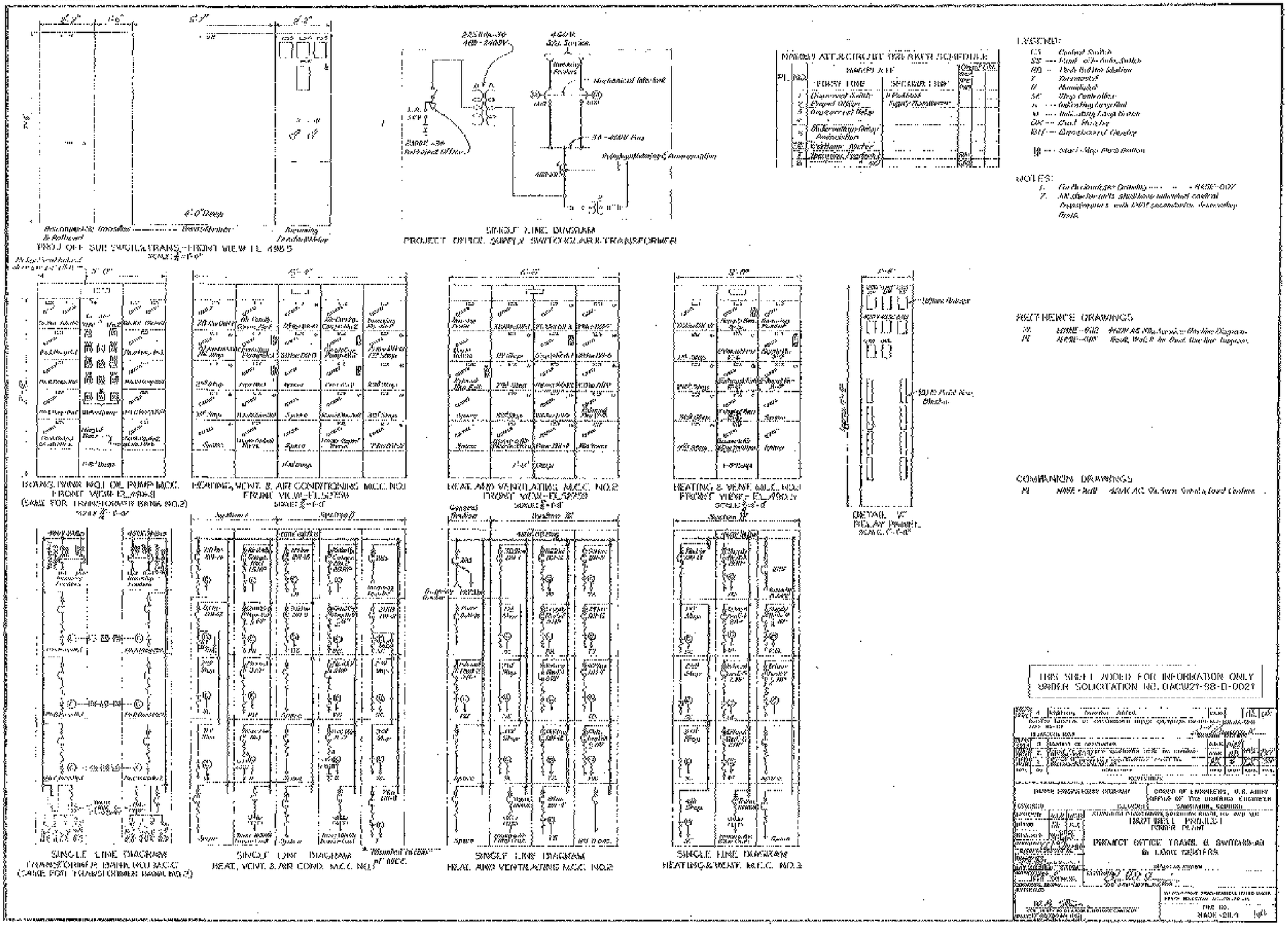
CORPS OF ENGINEERS

U. S. ARMY



INFORMATION ONLY

SHEET 119

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
MAIN AND AUXILIARY TRANSFORMER
FULL LINE DIAGRAM
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
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SCALE: SHEET 00

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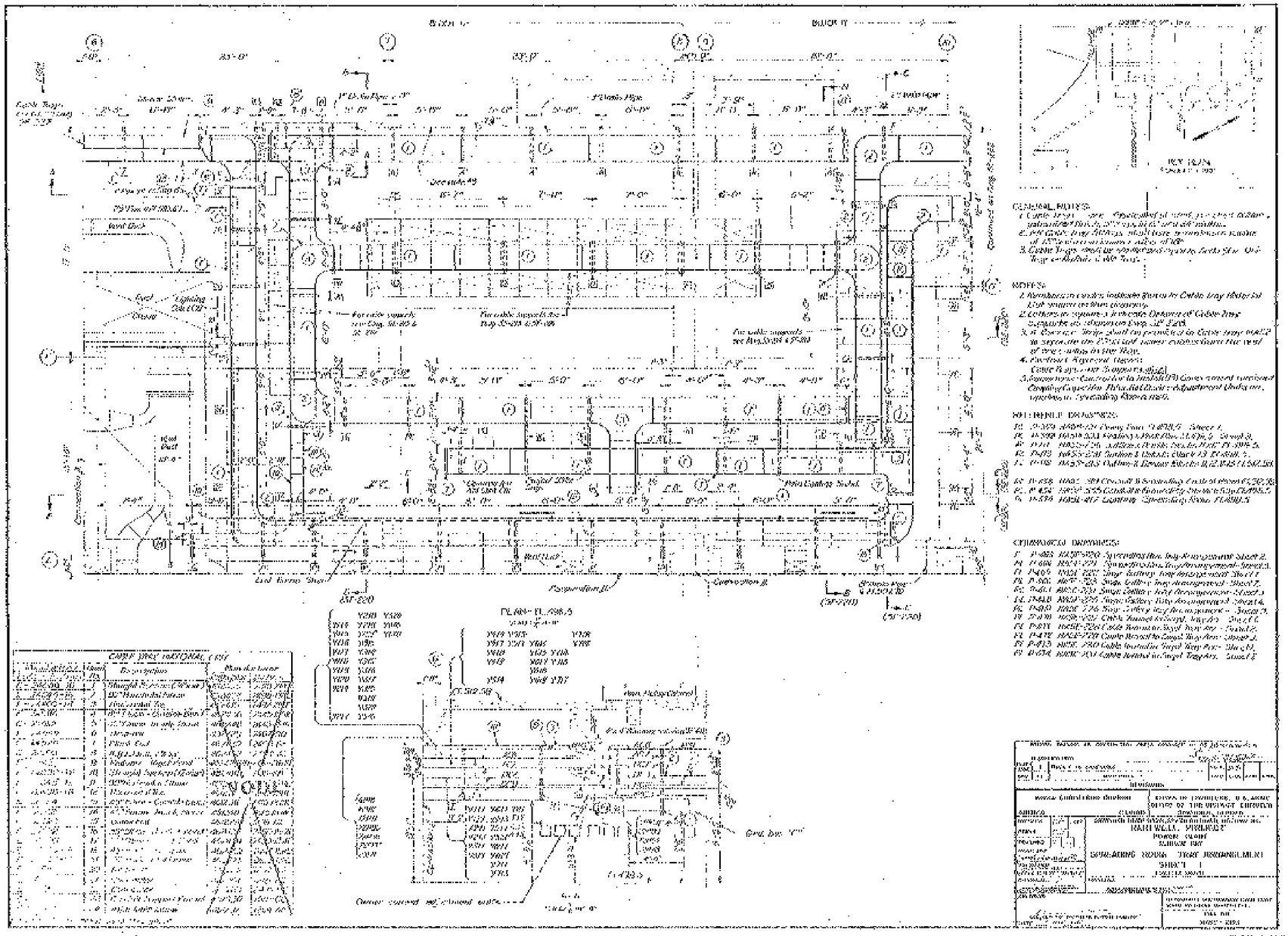

INFORMATION ONLY

SHEET 120

HYDROELECTRIC DESIGN CENTER PORTLAND, OR	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
SPREADING RM. TRAY ARRANGEMENT
SHEET 1
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
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SCALE:			SHEET 00

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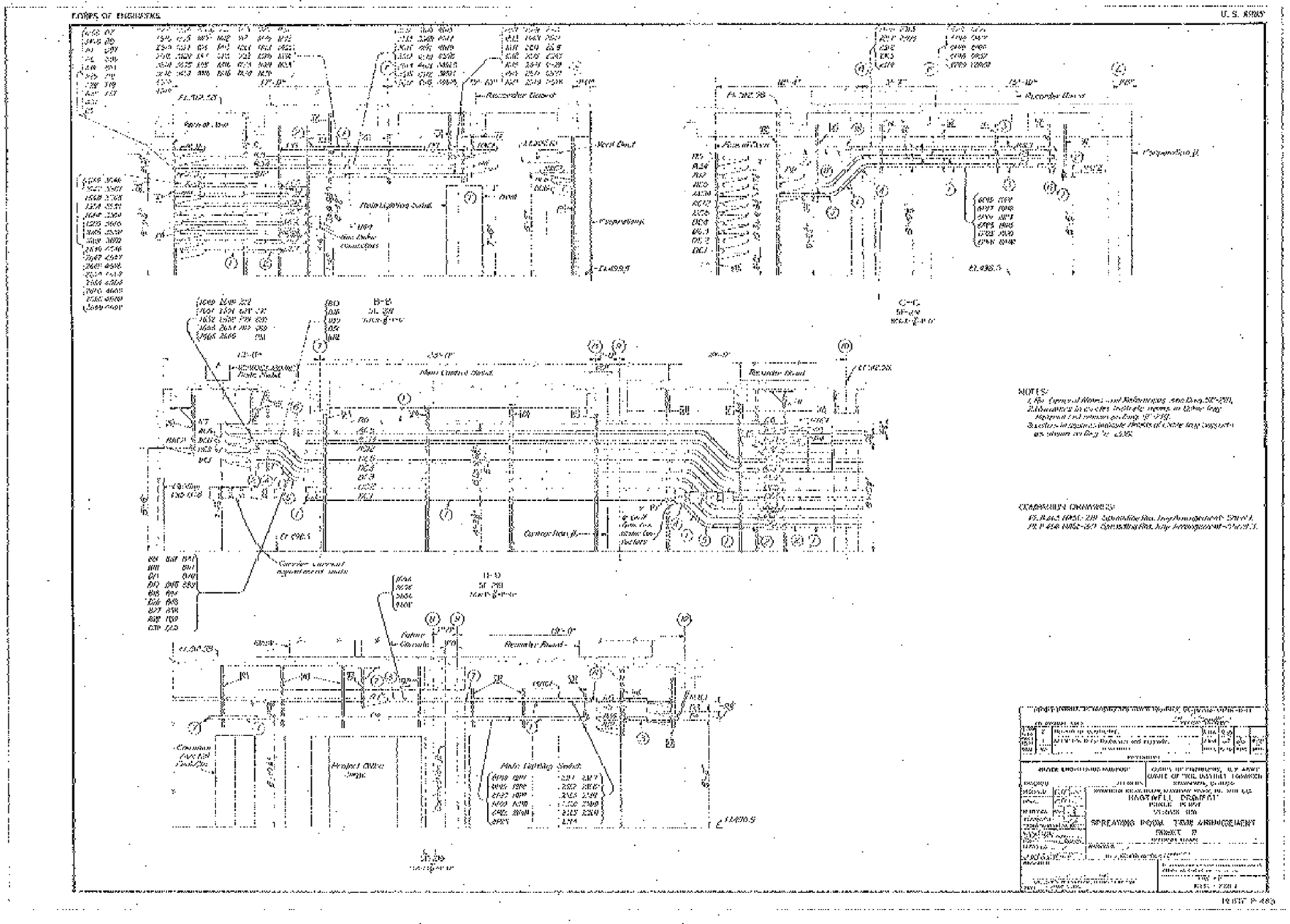

INFORMATION ONLY

SHEET 121

HYDROELECTRIC DESIGN CENTER PORTLAND, OR		U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
SPREADING RM. TRAY ARRANGEMENT
SHEET 2
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
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SCALE:			SHEET 00

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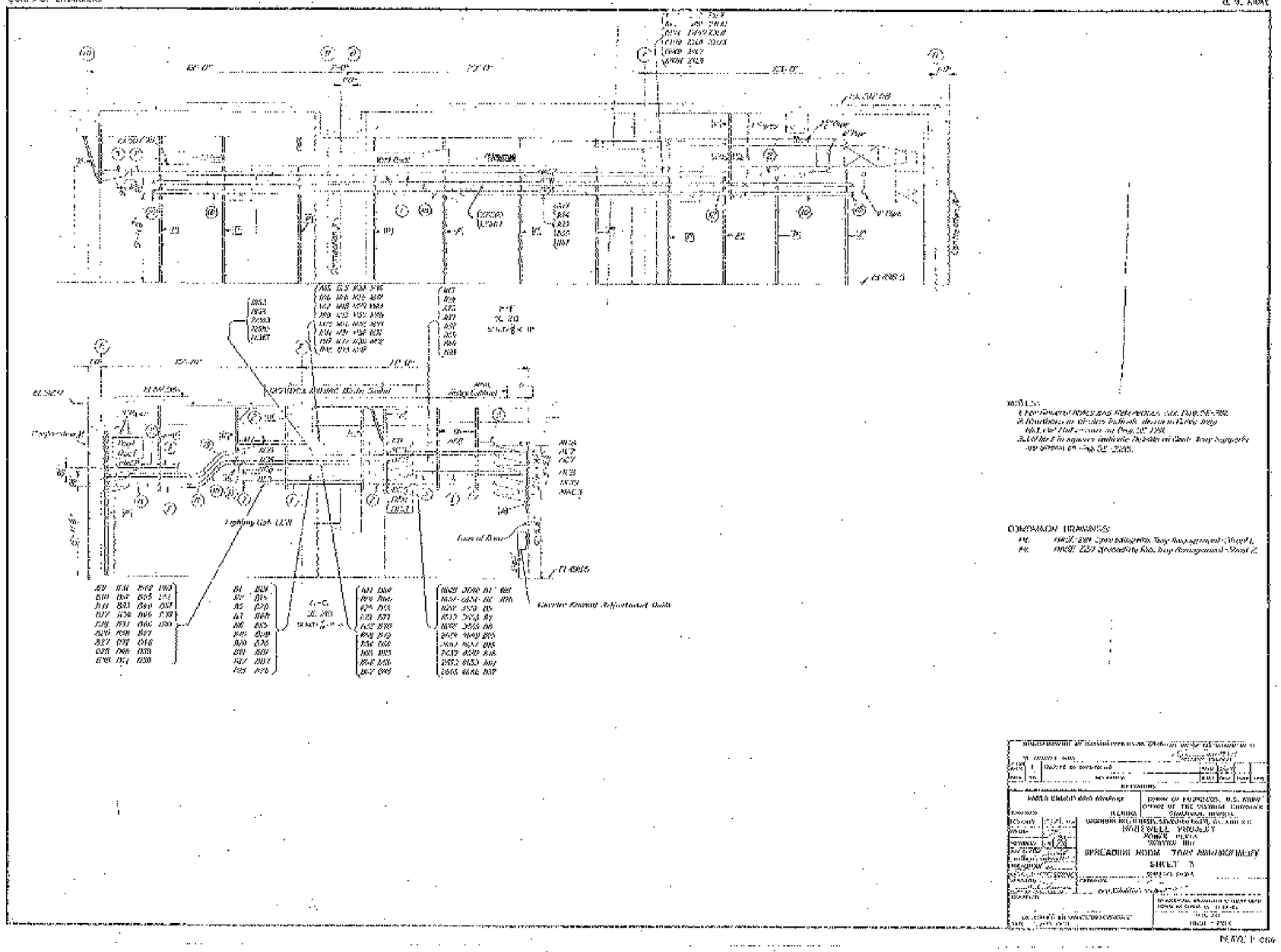

INFORMATION ONLY

SHEET 122

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
SPREADING RM. TRAY ARRANGEMENT
SHEET 3
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-14

SCALE: SHEET 00

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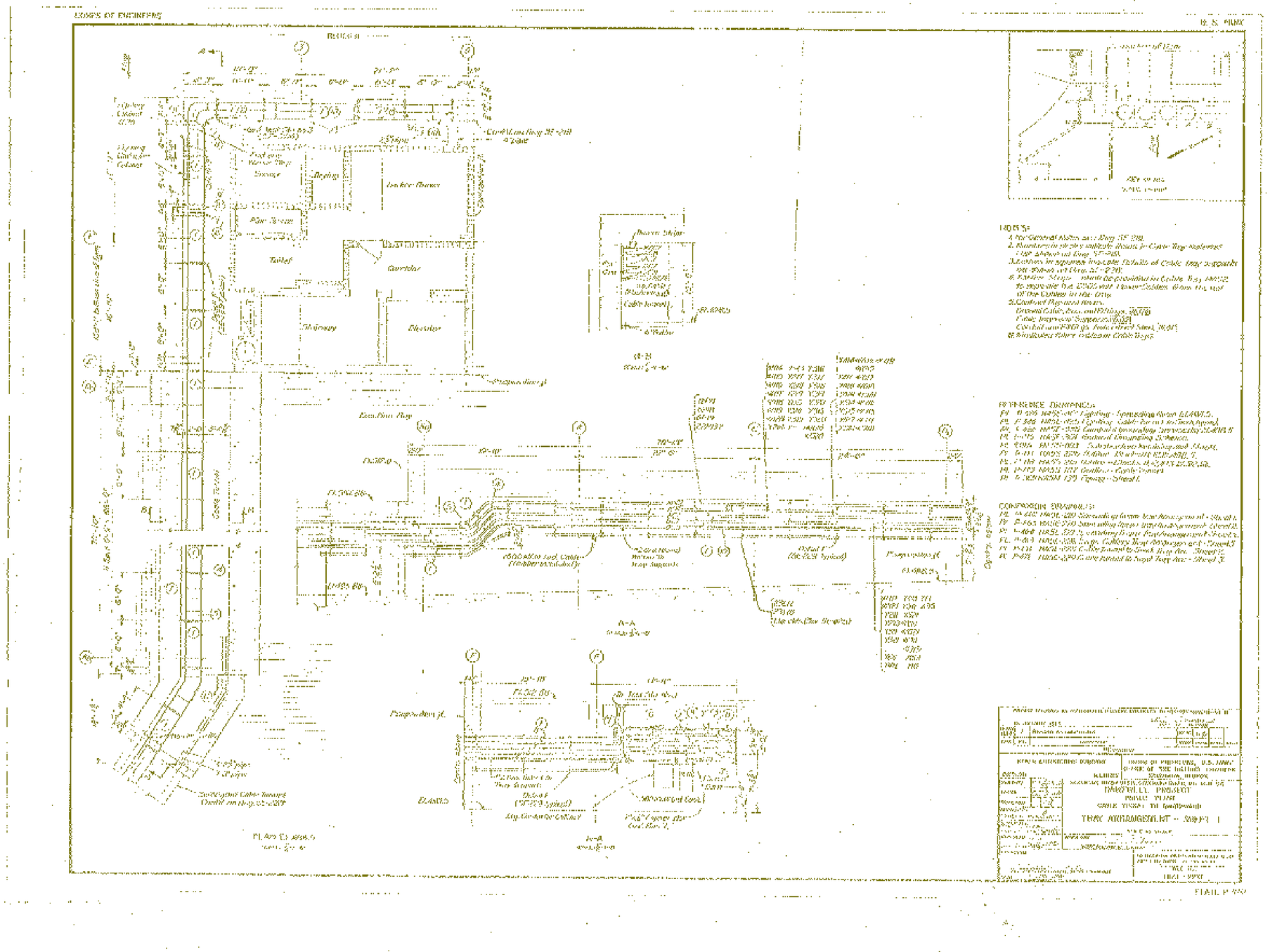

INFORMATION ONLY

SHEET 123

HYDROELECTRIC DESIGN CENTER PORTLAND, OR	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
TRAY ARRANGEMENT
SHEET 1
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-15
SCALE:			SHEET 00

13 Nov 2002
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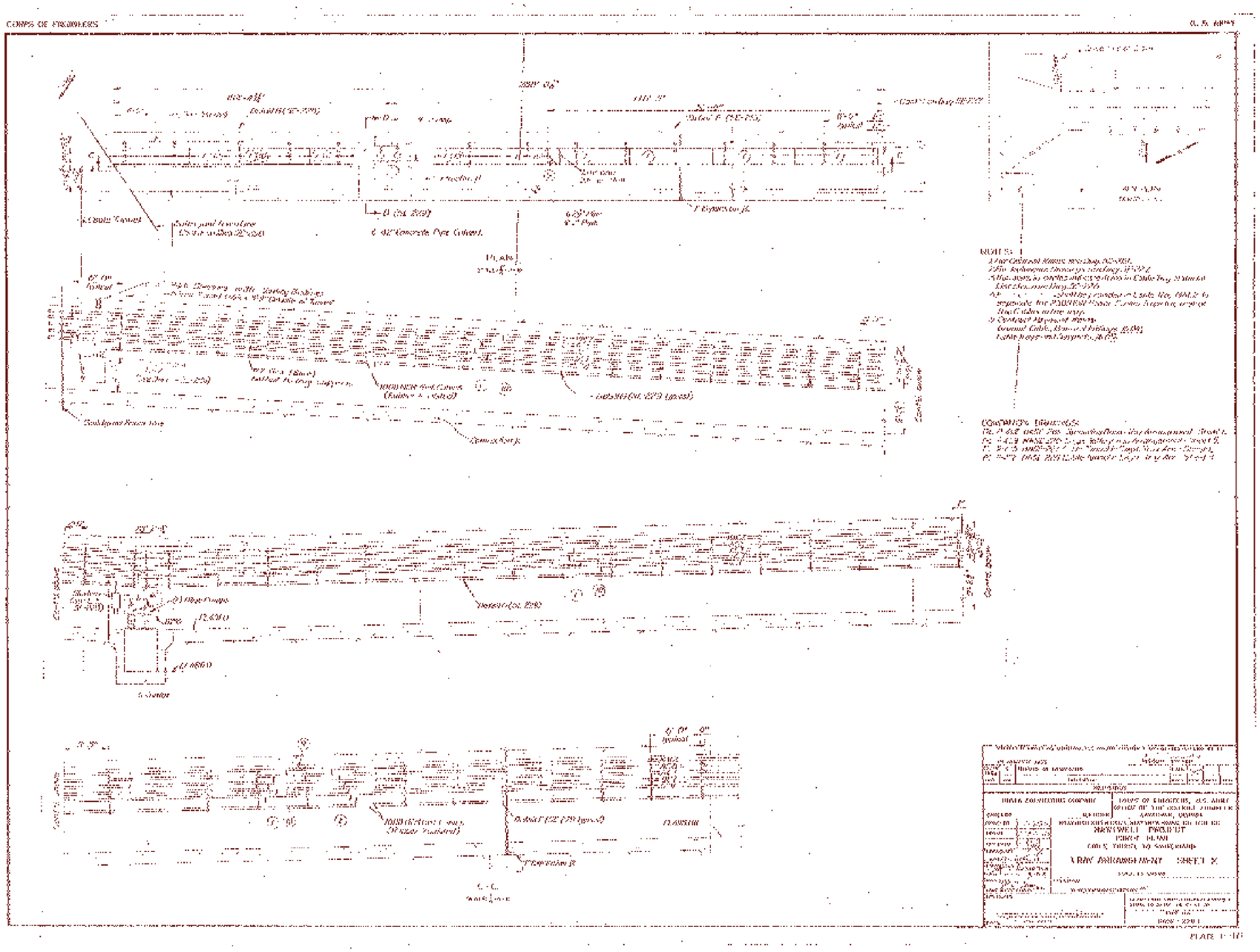

INFORMATION ONLY

SHEET 124

HYDROELECTRIC DESIGN CENTER PORTLAND, OR	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
TRAY ARRANGEMENT
SHEET 2
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-16
SCALE:			SHEET 00

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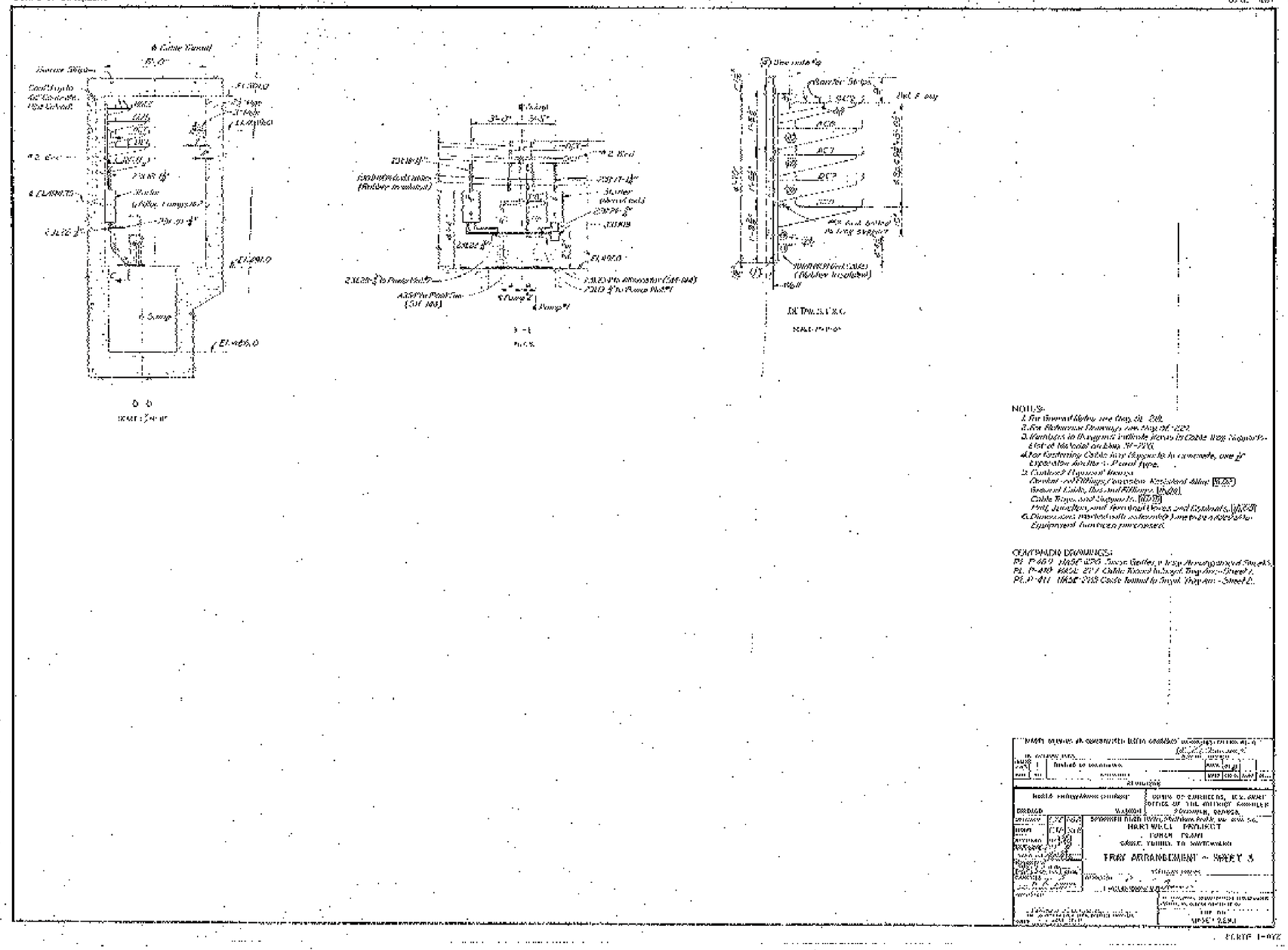

INFORMATION ONLY

SHEET 125

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
TRAY ARRANGEMENT
SHEET 3
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-17

SCALE: | SHEET 00

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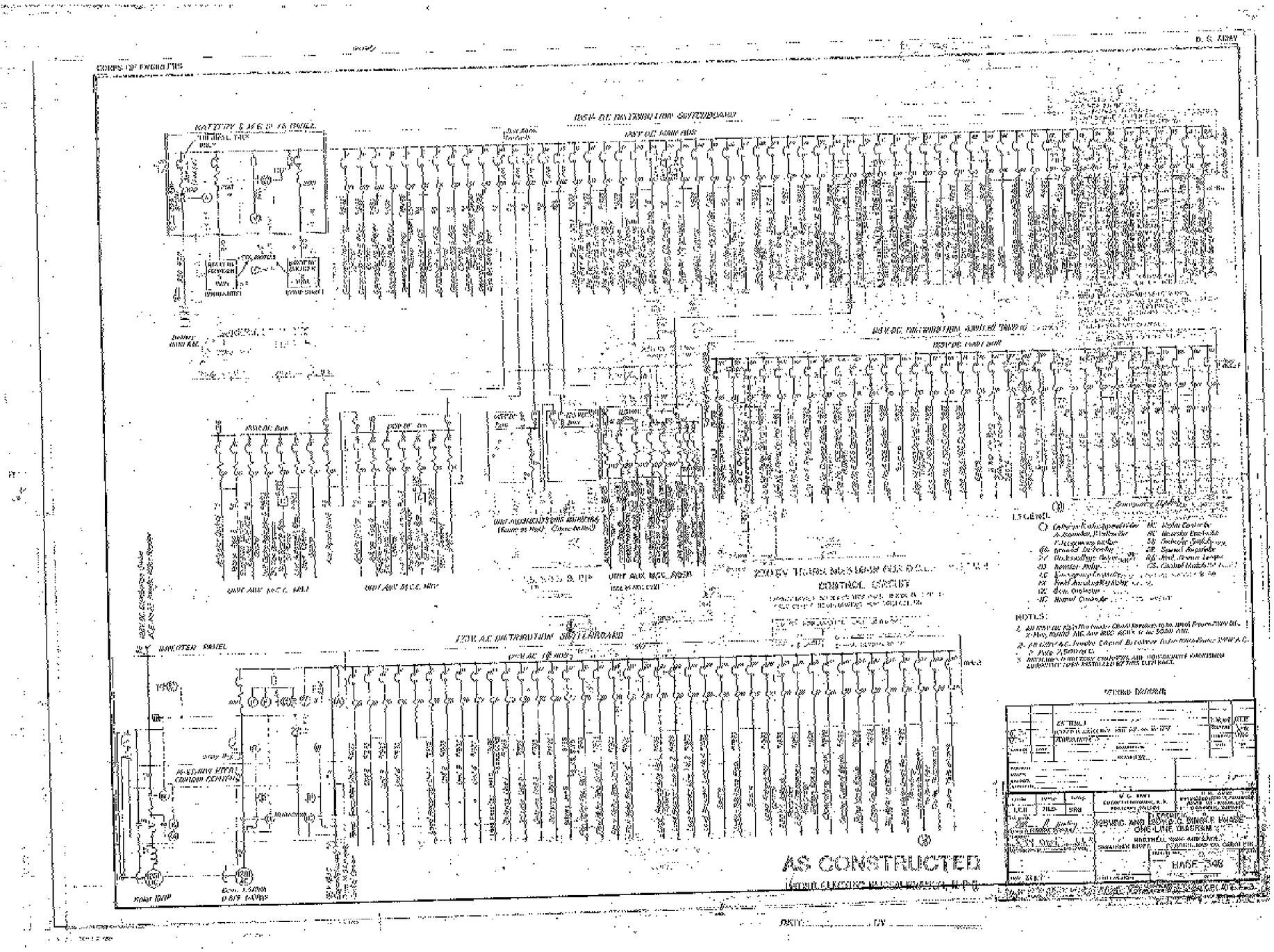

INFORMATION ONLY

SHEET 126

HYDROELECTRIC DESIGN CENTER
PORTLAND, OR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

HARTWELL MAJOR REHABILITATION - PHASE 2
HARTWELL DAM AND LAKE
SWITCHYARD
125 VDC & 120 VAC SINGLE PHASE
ONE LINE DIAGRAM
SAVANNAH RIVER GEORGIA AND S. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		HAR0157	R-18

SCALE: SHEET 00

13 Nov 2002
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